AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES	
12	1	3

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
69	March 1, 2006	N/A	

6. ISSUED BY	CODE	PS31-J	7. ADMINISTERED BY (If other than Item 6)	CODE	PS31-J

6. ISSUED BY
Procurement Office
George C. Marshall Space Flight Center
National Aeronautics and Space Administration
Marshall Space Flight Center, AL 35812

7. ADMINISTERED BY
Jeffrey S. Jackson
(256) 544-8935 Phone
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8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State, and Zip Code)	(✓)	9A. AMENDMENT OF SOLICITATION NO.

Science Applications International Corporation (SAIC)
Company 6, Technology Services Company
10260 Campus Point Drive
San Diego, CA 92121
c/o 6725 Odyssey Drive, Huntsville, AL 35806

9B. DATED (SEE ITEM 11)

10A. MODIFICATION OF CONTRACT/ORDER NO.   X
NNM04AA02C

10B. DATED (SEE ITEM 13)
1/1/04

CODE CAGE- 0T5L1	FACILITY CODE SAP- 103429

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[ ] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers   [ ] is extended,   [ ] is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15 and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)
N/A

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(✓) A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).

C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
X   FAR 43.103(a), the "Changes" clause, and Mutual Agreement

D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor [ ] is not, [X] is required to sign this document and return __3__ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.)

	Negotiated Estimated Cost	Shared Savings Fee	Award Fee Earned	Potential Award Fee	Contract Value	Total Sum Allotted
Prev. Base Total	$496,587,972	$0	$12,457,954	$16,462,006	$525,507,932	$406,614,851
This Modification	$0	$0	$0	$0	$0	$0
Rev. Base Total	$496,587,972	$0	$12,457,954	$16,462,006	$525,507,932	$406,614,851

SEE PAGE 2 FOR DESCRIPTION OF AMENDMENT/MODIFICATION

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect

15A. NAME AND TITLE OF SIGNER (Type or print)	16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)
Julia A. Whitt, Contracts Manager	David A. Iosco, Contracting Officer
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED

15B.
/s/ Julia A. Whitt
(Signature of person authorized to sign)

15C. DATE SIGNED
February 10, 2006

16B. UNITED STATES OF AMERICA
BY   /s/ David A. Iosco
(Signature of Contracting Officer)

16C. DATE SIGNED
February 15, 2006

STANDARD FORM 30 (Rev. 10-83)
Prescribed by GSA
FAR (48 CFR) 53.243

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT
(continued)

The purpose of this modification is to require, pursuant to the "Changes" clause, additional effort in support of Agencywide Mission Network management and Local Area Network (LAN) engineering at the Goddard Space Flight Center (GSFC). In addition, FAR Clause 52.204-9, Personal Identity Verification of Contractor Personnel, is incorporated by reference in Section I. Accordingly, NNM04AA02C is modified as follows:

A   Section I, Contract Clauses, Part I.1 A, FEDERAL ACQUISITION REGULATION (48 CFR Chapter 1) CLAUSES, is revised to reflect incorporation by reference of Clause 52.204-9, Personal Identity Verification of Contractor Personnel. This clause is required in accordance with guidance provided by Procurement Information Circular 06-01 dated January 18, 2006, which implements the credentialing requirements of Homeland Security Presidential Directive 12, "Policy for a Common Identification Standard for Federal Employees and Contractors."

B.   Attachment J-1, Performance Work Statement (PWS), is revised to direct the contractor, pursuant to the "Changes" clause, to provide effort in support of Agencywide Mission Network management and Local Area Network (LAN) engineering at the Goddard Space Flight Center (GSFC) as delineated on the revised PWS replacement pages delineated in (E) below. It is mutually agreed that the contractor will not commence performance of the effort prior to March 1, 2006. In addition, it is mutually agreed that this change order modification authorizes total performance of the effort only through May 31, 2007, and that all effort delineated by this modification will cease as of that date.

C.   Attachment J-2, Data Procurement Document, is hereby revised to reflect incorporation of additional DRD reporting requirements delineated as additional reports in DRD 974MA-006 and as DRDs 974MA-013, 974MA-014, and 974MA-015. These requirements are delineated on the enclosed replacement pages reflected in (E) below.

D.   In accordance with NFS 1843.7003, it is mutually agreed and understood that the immediate contract modification for the efforts delineated in (A) and (B) above covers only the period of March 1, 2006, through June 30, 2006, and that a not-to-exceed (NTE) cost for performance of the work covered by this change in the amount of $2,374,334 is hereby established. It is further agreed and understood that any costs ultimately definitized over and above the

NTE amount established for the period covered by this change shall be non-fee bearing. Upon definitization of the contractor's proposal submitted as a result of this modification, continued performance of the effort from July 1, 2006, through May 31, 2007, will be authorized.

E. The proposal submitted in response to the change delineated in (A) above shall be prepared in accordance with FAR Subpart 15.4, Table 15-2 (in the format prescribed for "Change Orders, Modifications, and Claims"). In preparing the proposal resulting from this Change Order, the contractor shall include costs through May 31, 2007. No deviations from the requirements stated therein will be accepted by the Government without the express written approval of the UNITeS Contracting Officer. The proposal shall be submitted no later than March 10, 2006.

F. This contract change shall be separately accounted for to the degree necessary to provide visibility into the actual costs incurred pending definitization of the proposal to be submitted as a result of this contract action.

G. The modification(s) made above are reflected in total on the change page(s) enclosed herewith. In order to reflect the change(s) made, the page(s) listed below are hereby deleted from, or added to, NNM04AA02C. Either bolded text or a vertical change bar included in the right margin indicates the specific area(s) of change.

Page(s) Deleted	Page(s) Added
I-1	I-1
J-1-i – J-1-iv	J-1-i – J-1-v
J-1-11	J-1-11
J-1-15	J-1-15
J-1-36	J-1-36
J-1-48 – J-1-87	J-1-48 – J-1-93
J-2-3	J-2-3
J-2-9	J-2-9
J-2-25 – J-2-28	J-2-25 – J-2-28
J-2-37-A – J-2-44	J-2-38 – J-2-48

H. All other terms and conditions of NNM04AA02C remain unchanged.

I.1 CLAUSES INCORPORATED BY REFERENCE (52.252-2) (JUN 1988)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available.
(End of clause)

NOTICE: The following clauses are hereby incorporated by reference:

A. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) CLAUSES

Clause No.	Title
52.202-1	Definitions (Dec 2001)
52.203-3	Gratuities (Apr 1984)
52.203-5	Covenant Against Contingent Fees (Apr 1984)
52.203-6	Restrictions on Subcontractor Sales to the Government (Jul 1995)
52.203-7	Anti-Kickback Procedures (July 1995)
52.203-8	Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity (Jan 1997)
52.203-10	Price or Fee Adjustment for Illegal or Improper Activity (Jan 1997)
52.203-12	Limitation on Payments to Influence Certain Federal Transactions (Jun 2003)
52.204-1	Approval of Contract (Dec 1989) [Insert "MSFC Procurement Officer"]
52.204-2	Security Requirements (Aug 1996)
52.204-4	Printed or Copied Double-Sided on Recycled Paper (Aug 2000)
52.204-7	Central Contractor Registration (Oct 2003)
52.204-9	Personal Identify Verification of Contractor Personnel (Jan 2006)
52.209-6	Protecting the Government's Interest when Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment (Jul 1995)
52.211-15	Defense Priority and Allocation Requirements (Sep 1990)
52.215-2	Audit - Negotiation (Jun 1999)
52.215-8	Order of Precedence- Uniform Contract Format (Oct 1997)
52.215-9	Changes or Additions to Make-or-Buy Program (Oct 1997)
52.215-11	Price Reduction for Defective Cost and Pricing Data-Modifications (Oct 1997)
52.215-13	Subcontractor Cost and Pricing Data-Modifications (Oct 1997)

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procurement processes and practices, and prevention of waste, fraud, and mismanagement (DRD 974MA-006).

c. Provide all supplies, materials, and services (not otherwise furnished by the Government) required to perform the services and functions specified in the PWS and to accomplish the UNITeS mission.

d. Provide replacement parts or equipment, spare parts, temporary labor services, vendor maintenance agreements, software subscription services, hardware engineering changes or updates, IT-related supplies and special general-purpose software packages necessary to perform the operations and maintenance functions of this contract.

e. Provide hardware upgrades; systems and applications software licenses, renewals, and enhancements; services and maintenance, including utilizing Agencywide or government-wide contracts or site software license agreements, for the systems for which the contractor is designated Systems Manager.

f. Facilitate payments to other contractors and suppliers in support of customer agreements including international and other government agencies.

2.6   ASSET MANAGEMENT

The contractor shall be responsible for the official accountable record keeping, physical inventory, financial control and reporting of all government property for which the contractor has been given responsibility (DRD 974MA-007). The contractor shall provide a Government Property Management Plan in accordance with DRD 974LS-001. The contractor is also responsible for shipment of property as required to support service delivery.

The NASA Mission Network (PWS 3.10) Property and Asset management will be the responsibility of the government.

2.7   SECURITY

The contractor shall implement a comprehensive security program consistent with applicable NASA, DOD, MSFC, and GSFC regulations and procedures for the performance of the UNITeS mission. The contractor's security program shall provide an approach that is functionally able to address end-to-end security planning, issues, and incidents for MSFC and Agency supported systems. The program shall also represent an integrated approach to security planning for all IT areas, including desktop, server, and network components.

The program shall encompass, at a minimum, the following functional areas: telecommunications security functions, an IT Security Program, and disaster preparedness and recovery.

2.7.1   Telecommunications Security

The contractor shall support customer and program requirements for classified Communications Security (COMSEC) and unclassified security. In performance of this function, the contractor shall:

c. Maintain continuous records of changes or movements of equipment, furniture, and telephones to ensure that accountability requirements for all equipment and systems are met (DRD 974MA-007).

d. Maintain in the MICS continuous records of changes or movements of personnel providing this information on-line for COTR designated personnel review (DRD 974MA-007).

e. Maintain location information in the MICS including number of personnel by location, square footage, and associated lease and maintenance costs (DRD 974MA-007).

f. Review and assess MSFC Facilities Office planning activities for impact on CIO systems and provide comments to designs and shop drawings on MSFC Form 1540 (DRD 974MA-007).

g. Plan for future facility requirements or expected changes in personnel and equipment locations.

h. Support facility modifications to accommodate personnel space change requirements and new equipment at specified locations scheduling this activity to minimize disruption of daily operations (DRD 974MA-007).

i. Obtain approval from the cognizant NASA Facilities Offices before performing any facilities activities at a NASA installation.

j. Track in the MICS the schedule and status information for facilities work requests and facilities projects that affect IT service delivery (DRD 974MA-007).

k. Define and document environmental requirements to accommodate equipment (DRD 974MA-007).

l. Develop and maintain memoranda of agreement between MSFC and host center/facilities to document requirements to house UNITeS systems and personnel (DRD 974MA-007).

2.10   QUALITY ASSURANCE

The contractor's quality system shall be compliant to ANSI/ISO/ASQC Q9001-2000. The contractor may satisfy this requirement by current registration by a recognized registrar and/or by MSFC audit of their system. The contractor shall detail their planned quality controls for the product being procured and their quality system controls in a quality section in accordance with DRD 974MA-001.

If the contractor operates to or uses MSFC or other NASA Center procedures, the contractor shall support the applicable Center's registration process for these procedures.

2.11   CUSTOMER RELATIONSHIP

The contractor shall partner with NASA to perform the following customer relation functions across all services.

a. Operate the root-level NASA directory.
b. Replicate data with all Center-level directories.
c. Update directory schemas to support new or changing application requirements.

3.6.9   IP Address Management

The contractor shall manage, assign, and delegate the NASA IP address space. The contractor shall coordinate with the American Registry of Internet Numbers (ARIN) for registration of NASA's networks and IP management policies.

3.6.10   Facsimile Broadcast Service

Facsimile broadcast provides the capability for NASA users to send a document to multiple recipients, as established on a preset distribution list, via a single transmission. In providing this service, the contractor shall:

a. Establish and maintain user accounts.
b. Assist users in building and modifying distribution lists.
c. Report performance and utilization metrics (DRD 974MA-006).

3.6.11   Office Space

The contractor shall provide office space in support of the services described in 3.6.

3.7   SYSTEMS MANAGEMENT AND OPERATIONS

The contractor shall provide network scheduling, network monitoring, network control and system management, problem management, WAN operational support, and control centers in support of the services described in this PWS. Systems Management and Operations functions provided in support of GSFC local services and performed by the NASCOM Operations Management Center, Goddard TV Central, Goddard Voice Control, and Goddard Technical Control Facilities will be provided by the MOMS contract. The UNITeS contractor shall establish agreements and joint operations procedures with the Millennia and MOMS and contractors for systems management and operations services performed at GSFC. The agreements shall address how the contractors will work together to accomplish the following:

a. Ensure there is no overlap in responsibility or authority with staffing;
b. Ensure overall staffing does not exceed available physical space;
c. Ensure continuity of service and efficient use of resources to perform end-to-end troubleshooting.

3.7.1   Network Scheduling

The contractor shall provide scheduling and coordination to optimize the operation of all WAN entities. The work period is normally performed 7:00 am to 7:00 pm, Central Time, Monday through Friday. The contractor shall:

3.10   MISSION ENGINEERING AND NETWORK MANAGEMENT

The scope and objective of this work is to provide network and sustaining engineering, network management and operation, and system administration for the NASA mission network. The support includes, but is not limited to, overall operational network engineering, sustaining engineering of network components, network security engineering, and day-to-day operational support that provides for the transmission and delivery of telemetry, commands, and data to all NASA missions and projects.

The objectives of this effort also include a focus on the application and customization of emerging technologies to meet current and future networking requirements, and the necessary integration required to deploy new technologies into the existing environment.

The work also provides for operational support of on-going missions and projects and shall include providing support for the launching of new satellites and special activities such as servicing missions and critical coverage of space activity.

The Government will provide procurement, property management, logistics, and property accountability for the NASA Mission Network.

3.10.1   Network and Sustaining Engineering

The contractor shall provide operational network and sustaining engineering of network components for all elements of this PWS. Engineering expertise shall be provided for both wide area and local networks. The contractor shall also develop network designs and operational concepts, and NASA will approve the design concepts through the appropriate NASA channels.

In addition, the contractor shall perform network engineering support for the Goddard Space Flight Center (GSFC) and Agency networks. Network engineering shall include the preparation of requirements analyses and a prototyping strategy for implementing the requirements, development of network architecture(s) and design, site preparation, installation, integration and testing for deployment, sustaining engineering, trouble-shooting, and preparing as-built documentation for all implemented requirements.

The contractor shall provide Event Report (ER) analysis (DRD 974MA-015) and resolution, priority System Problem Report (SPR) resolution (DRD 974MA-015) (if necessary), respond to Daily Summary Reports (DSR), and provide on-call mission availability.

3.10.2   Small Conversion Devices Sustaining Engineering

The Contractor shall also provide sustaining engineering and user support for Small Conversion Devices (SCD) and Programmable Telemetry Processors (PTP). Sustaining Engineering includes all activities required to maintain and enhance the aforementioned devices. Examples of sustaining engineering activities include, but are not limited to: configuration management, defect identification and tracking, defect correcting, capability enhancements, installation, configuration, testing, design reviews, and delivery of software releases. Capability enhancements include, but are not limited to: requirements analysis, software design, and software development.

Sustaining Engineering requirements for the SCD shall include:

a. <u>Engineer SCD Releases.</u> The Contractor shall provide requirements analysis, system design, coding, configuration management, and testing for future SCD releases. The Contractor shall provide software development and system testing of the Nascom Small Conversion Device (SCD). The Contractor shall hold software design reviews prior to release of new versions within the period of performance of this work.

b. <u>Maintain Related Software.</u> The Contractor shall perform application modifications to support future network requirements and to correct software issues. The Contractor shall support the maintenance of several tools (e.g., debuggers, traffic generators, and traffic capture software) that provide SCD system test and network test capabilities, diagnostic and fault isolation capabilities, and network traffic data collection capability.

c. <u>Distribute Upgrades.</u> Since the SCD utilize the Linux Operating System, the Contractor shall also support the distribution of: Linux upgrades, security patches/fixes issued by Computer Emergency Response Team (CERT) or Linux developers, kernel upgrades, custom kernel upgrades, and custom serial drivers (i.e., the Avtec ATHSIO2 board and the Nascom Interface Board (NIB)).

3.10.3   Network Management and Operations

The contractor shall be responsible for on-site network management of all mission IP networks providing connectivity between Greenbelt and other points in the network. These networks include the local and wide area Internet Protocol (IP) Operational Network (IONet) and the EOSDIS backbone Network (EBNet). The networks are managed in the IP Network Operations Center (IPNOC) located in the Nascom Operations Management Center (NOMC) at the GSFC.

The contractor shall also be responsible for providing life cycle mission operations support for the operational conversion device service in support of NASA missions and projects. This service is provided via the Internet Protocol Operational Network (IONet) and controlled from the NOMC.

To perform the network management responsibilities, the contractor shall interact and coordinate with other contractors and end users in order to operate and manage the network services. The contractor shall also maintain appropriate levels of certification for all applicable staff. In addition, the contractor shall maintain escalation procedures and develop root cause analysis and corrective actions for major outages.

3.10.3.1   IPNOC

The contractor shall perform IPNOC network management responsibilities to include monitoring the networks, isolating problems, coordinating maintenance, upgrading network components, and repairing the networks. The contractor shall also be responsible for day-to day operational support, which provides for the transmission and delivery of telemetry, commands, and data to all NASA missions and projects.

The contractor shall provide network management, on a 24 x 7 basis, of the local networks, sub-networks, firewalls, and components in accordance with NASA and

NISN developed policies and procedures, including enhanced coverage for NASA-declared critical periods. Critical periods typically bracket launch, early orbit, payload deployment, and for Shuttle, Extra-Vehicular Activity (EVA) and landing. Enhanced coverage includes increased staff and on-site engineering during particular shift(s).

In the performance of network monitoring of local networks, the contractor shall:

a. Monitor frame/cell switched and routed networks using Government provided Network Management System (NMS) and workstations.
b. Monitor all network problem isolation and resolutions.
c. Compile traffic statistics for network optimization and engineering.
d. Provide configuration management for all infrastructure components.
e. Coordinate maintenance issues and work with maintenance providers to maintain, repair, and upgrade network equipment.
f. Be responsible for creating and testing all new configurations and/or configuration changes for the IONet.
g. Operate, maintain and upgrade the IPNOC Network Management System (NMS) using Commercial Off-The-Shelf (COTS) tools.
h. Maintain and upgrade the IONet firewall and any related firewall tools.
i. Maintain and upgrade the IONet Domain Name Servers (DNS).
j. Report all anomalies and the results of all subsequent restorals to the Shift Communications Manager (Comm Manager).
k. Interface and coordinate with other areas of the NOMC, if necessary, in order to provide and restore conversion device service.
l. Maintain a Mission Network Operations Log (DRD 974MA-014) to log all operations, testing, and restoral activities.

The Government will provide the contractor with access to the NASA IT lab to support and accomplish tasks. The lab is configured with Government-provided hardware and software including evaluation copies of products, routers, systems, and hardware for software testing.

3.10.3.2   Conversion Device Service

The contractor shall provide operation, maintenance, and user support for Small Conversion Devices (SCD) and Programmable Telemetry Processors (PTP). In performing this effort, the contractor shall:

a. Integrate the operation of the conversion devices into the operational service provided by the IPNOC through the operation, management, and sustaining engineering and integration of the services.
b. Manage, operate, configure, install, troubleshoot, and repair conversion devices used in the network as gateways between the legacy 4800 bit block and the Internet Protocol (IP).

c. Staff on-console positions, 24 hours a day, 7 days a week, during day-to-day, mission critical, and special support operations.

d. Configure, manage, and operate conversion devices for operational and testing support of missions and projects, according to approved requirements and mission briefings.

e. Reconfigure conversion devices to maintain and support missions and projects as necessary and required.

f. Provide troubleshooting, restoral, and maintenance services for conversion devices in order to maintain support for missions and projects.

g. Report all anomalies and the results of all subsequent restorals to the Shift Communications Manager (Comm Manager).

h. Interface and coordinate with other areas of the NOMC, if necessary, in order to provide and restore conversion device service.

i. Maintain a Mission Network Operations Log (DRD 974MA-014) in order to log all operations, testing, and restoral activities.

3.10.4   System Administration

In performing day-to-day activities related to maintenance of existing databases, the contractor shall:

a. Generate and implement Secure Gateway Requests associated with conversion devices.

b. Assign network data routing codes (source/destination, logical port addresses and fixed multicast addresses), as necessary and required

c. Maintain a Source/Destination Code Handbook (DRD 974MA-013) containing network data routing codes and maintain the security level of the handbook according to the applicable Nascom Security Guidelines and Operating Procedures.

3.11　LOCAL AREA NETWORK ENGINEERING

The objectives of this work include a focus on the application and customization of emerging technologies to meet current and future networking requirements, and the necessary integration required to deploy new technologies into the existing environment.

The contractor shall provide network engineering and sustaining engineering of local area networks (LANs) at GSFC and associated network components. Network engineering shall include the preparation of requirements analyses and a prototyping strategy for implementing the requirements, development of network architecture(s) and design, site preparation, installation, integration and testing for deployment, sustaining engineering, trouble-shooting, and preparing as-built documentation for all implemented requirements.

The contractor shall develop network designs and operational concepts, and NASA will approve the design concepts through the appropriate NASA channels.

The contractor shall also perform technology evaluation studies and analysis as directed. Technical evaluation studies may include such types of activities as technology or vendor product surveys, requirements analysis, benchmark analysis, lab testing, proof of concept, prototypes, or other type of demonstrations. Each study initiated shall include, but is not limited to the following deliverables: (1) Work plan to include a charter statement; (2) baseline assessment; (3) study conclusion and recommendations; and (4) additional study documentation as required and/or necessary.

3.12　NETWORK SECURITY

The contractor shall provide IT network security to network customers. In performing these services, the contractor shall:

a. Collect and assess security requirements against network data flow requirements and define network firewall implementation. The contractor shall also support incident investigation and IT security incidents/emergency response in coordination with the GSFC IT Security Manager.

b. Use the NASA security lab to commence product/solution testing, including Virtual Private Network (VPN) testing. The NASA security lab is located at GSFC and contains Government provided hardware and software. The contractor shall provide documentation on testing and evaluation of security products and solutions (974MA-006). The contractor shall also provide "as built" documentation of the security lab (974MA-006) and an Operations Plan for the security lab (DRD 974MA-006). In addition, the contractor shall develop procedures to share tools, technologies, and expertise through the Scientific and Engineering Workstation Procurement (SEWP) security lab located at GSFC.

c. Support the GSFC Chief Information Officer (CIO)'s goal to strengthen and improve information technology (IT) security. The contractor shall develop and implement the high priority technology-related recommendations established by the NASA CIO, the NASA Principal Center for IT Security (PC-ITS), the GSFC CIO, and the GSFC Deputy CIO for IT Security.

d. Perform quarterly vulnerability scanning including unannounced scanning consistent with the current network scanning architecture and approach and report scanning findings and metrics quarterly (DRD974MA-006). The contractor shall also support and maintain the government's secure webserver to distribute vulnerability reports and shall provide technical support for center vulnerability scanners. In addition, the contractor shall sit on the CRB (Goddard's IT Vulnerability Waiver Board).

e. The contractor shall establish an intrusion detection architecture and approach, deploy, operate, and manage an intrusion detection infrastructure, and perform network traffic monitoring and analysis. The categories of network traffic captured, stored, and analyzed must be approved by the Deputy CIO for IT Security. The contractor shall report all identified intrusions to the GSFC ITSM and report intrusion detection findings monthly to the Deputy CIO for IT Security (DRD 974MA-006). The contractor shall also develop recommendations for a penetration testing methodology and approach for GSFC and shall coordinate this effort with the GNECCB and the ITSWG.

f. The contractor shall establish a security incident response team to support the Deputy CIO for IT Security and the ITSM. With coordination from the task monitor, the contractor shall serve as a network and host computer security-engineering group providing consultation and intrusion evaluation services to the GSFC community.

3.13   BUSINESS STUDIES

The contractor shall perform NASA Information Technology business studies and analysis as directed to include Strategic Planning, Business Process Analysis, and analyses related to IT investments.

3.14   PROGRAM SUPPORT

The contractor shall provide strategic program management support to the Scientific and Engineering Workstation Procurement (SEWP) Program Manager in developing and implementing strategic initiatives for the SEWP organization. This shall include the facilitation and support of SEWP retreats and other meetings as needed. This work includes support to the NASA Headquarters blue pages activities.

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4.   *IEMP* INTEGRATION SERVICES

         The contractor shall be responsible for executing all functions and services defined
below in support of the roles and responsibilities assigned to the Integrated Enterprise
Management Program (IEMP) Integration Project Office (IPO) at MSFC. These functions and
services are categorized in three major areas: infrastructure support, module project support, and
operations and sustaining support. These functions and services include operation/ maintenance
of existing capabilities, integration with established business entities (e.g., WebTADS),
development or acquisition, and implementation of enhancements or COTS products.

         Effective November 15, 2005, the work described in Section 3.1.4, Web Time and
Attendance Distribution System (WebTADS), shall be performed under this section.

4.1   INFRASTRUCTURE SUPPORT

         The contractor shall be responsible for developing, documenting and maintaining an
Enterprise Architecture for IEMP. The contractor shall provide a methodology and tool set for
the documentation and maintenance of this enterprise architecture. The contractor may elect to
utilize the existing IPO tool set for architecture documentation or propose their own tool(s) and
methodology. The Enterprise Architecture shall consist of the IEMP Business, Applications, and
Technical Architectures (DRD 974MA-007).

4.1.1   Business Architecture

         Through interaction with each module's NASA process team and each module
project's implementation contractor, the contractor shall utilize an enterprise architecture tool to
document the business processes implemented by the module (DRD 974MA-007). The business
architecture shall include all modules (including those not yet initiated) and shall represent a
blueprint of the interaction between the high-level functions and processes. The process models
shall be incorporated and maintained in the IEMP repository. The contractor shall update these
models as business processes are updated to insure that a central repository always contains
accurate descriptions of the business processes implemented by the collective modules that make
up the total IEM system. Different implementation contractors may be utilized for different
module projects and each may utilize different implementation methodologies and tool sets;
however the contractor shall maintain the central repository that documents all processes across
all modules.

4.1.2   Application Architecture

         Through interaction with each module's NASA process team and implementation
contractor, the contractor shall utilize existing tools to further develop and maintain the Application
Architecture (DRD 974MA-007) throughout the life of IEMP. The applications architecture shall
include the key interfaces and information needs between modules, and a definition of how those
interfaces will be implemented. The contractor shall insure that the Application Architecture
facilitates the use of the IEM Integration Architecture by including standard events and messages
(data) that are associated with each integration.

4.1.3 Technical Architecture

The contractor shall define, implement, and maintain the IEMP technical architecture and coordinate with the Agency CIO to insure that the IEMP architecture is compliant with the overall Agency IT architecture (DRD 974MA-007). The contractor shall annually assess future directions and developments in information technology to insure that the IEMP architecture evolves to take advantage of new product releases by software and hardware vendors.

4.1.3.1 Integration Architecture

The contractor shall maintain and enhance the IEM integration architecture, which is based on EAI technology. The contractor shall provide and utilize a methodology that takes advantage of the EAI technology to shorten interface development timelines and reduce long-term maintenance costs. The contractor shall ensure that the integration architecture and associated product set supports evolving standards and technologies and is positioned to support NASA's ability to conduct electronic commerce with its customers and trading partners.

4.1.3.2 Information Delivery Architecture

The contractor shall maintain the IEMP reporting and information delivery architecture to be utilized for each module. As additional applications are implemented, the contractor shall evolve the architecture to incorporate SAP and non-SAP data into the data warehouse. The contractor shall establish a metadata management process for the information stored in the Business Information Warehouse (BW).

4.1.3.3 Security Architecture

The contractor shall develop and maintain NPR 2810.1-compliant Security Plans for the underlying infrastructure components in accordance with DRD 974CD-001. The contractor shall also interact with NASA and contractor IT Security personnel in the review and audit of these documents and associated security activities such as risk assessments and intrusion detection exercises.

4.1.3.4 Systems Architecture

The contractor shall develop and maintain the technical infrastructure that is common across all module projects. Examples of infrastructure elements include: backup/recovery systems, storage systems, EAI components, data center networks/firewalls, and systems management/monitoring tools. The contractor shall design the infrastructure in a manner that maximizes systems management efficiencies and cost savings thereby reducing the operational costs while increasing customer satisfaction.

4.1.3.5   Operations Architecture

The contractor shall be responsible for working with both module projects and IEMP service providers (vendors, NACC, NISN, etc.) to plan for the eventual end state operational model. The operations architecture shall include, but not be limited to:

     a. Backup and Recovery
     b. Job Scheduling
     c. Event Management

4.2   MODULE PROJECT SUPPORT

The IEMP consists of a series of projects organized around specific functional modules. The Integration Project is responsible for providing key elements of module project implementations. The contractor shall provide the following elements of module project support.

4.2.1   Agency Design

The objective of the Agency Design Phase is to achieve a standard, Agency configured system, well defined Agency interfaces and reengineered processes that operate within the capabilities of the software.

4.2.1.1   Technical Architecture

The contractor shall define a more detailed technical architecture that consists of products and technologies that meet the requirements of the module project (DRD 974MA-007). The contractor shall also develop appropriate work plans and allocate resources to deploy these components in accordance with each module's baselined schedule and implementation approach (DRD 974MA-006). The implementation of the technical architecture shall require close coordination with the module project's implementation contractor

4.2.1.2   Configuration and Data Conversion

The contractor shall provide subject matter experts to augment the Agency process team at a level required to provide Application Functional Support as defined in section 4.3.3. This support enables the contractor to gain knowledge of the application configuration as it is being developed in order to provide sustaining support. The contractor shall also provide the tools and underlying system environments (e.g., Development, Test, Staging, Production) necessary to support the process team and its Implementation Contractor during the application configuration and data conversion activities. This shall require the contractor to establish an effective working relationship with both entities so that requirements may be understood and translated into each module's work plan for execution in a timely manner. The contractor shall be responsible for taking security requirements and initial roles and developing the final design and implementation of security roles and profiles required for the module (DRD

974MA-007). Finally, the contractor shall develop and maintain an NPR 2810.1-compliant Security Plan for each module in accordance with DRD 974CD-001.

4.2.1.3   Business and Application Architectures

Working with each module's process team, the contractor shall update and maintain the IEMP Business and Application architectures as described in sections 4.1.1 and 4.1.2 to reflect the Agency Design as approved by the module project steering committee (DRD 974MA-007).

4.2.1.4   Agency Interfaces

During the Agency Design phase, Agency Interfaces are identified and developed. Agency interfaces are interfaces between the IEM module and other Agency systems. The contractor shall define and follow a development methodology for interface development. The contractor shall lead the identification of Agency interface requirements, coordinate the functional design and requirements analysis process, develop the necessary technical designs, and develop all software components that must be built in the new IEM module or in the EAI tool. The contractor shall coordinate with the implementation contractor to insure that this development method integrates with the module project's implementation methodology and schedule. The contractor shall conduct unit testing and end-to-end testing of all interfaces before migrating the interfaces to system integration testing.

4.2.1.5   Extensions and Bolt-Ons

During Agency Design, the module project process team and implementation contractor may identify certain gaps that exist between the selected COTS product's base functionality and NASA's requirements. Options for addressing a gap include implementing a 3rd party COTS bolt-on that must be interfaced with the module or developing an extension in the COTS development environment. The contractor shall be responsible for developing any interfaces required between the module and selected bolt-ons. The contractor shall also be responsible for designing and developing any required extensions based on the functional designs delivered by the module project. The contractor shall conduct unit testing of any extensions and/or bolt-on interfaces before migrating these components to system integration testing.

4.2.1.6   Testing

The contractor shall support System Integration Testing for each individual module. Contractor representatives shall coordinate with each project during Agency Design to insure that the project's test plan includes the appropriate integration testing. The contractor shall support system integration testing by assisting testers with execution of Agency interfaces, bolt-on interfaces, extensions, and reports. The contractor shall also provide fixes for approved system discrepancies related to these components. The contractor shall provide the servers, databases and application instances to be utilized by the module projects in conducting unit, system, and integration testing. The contractor shall manage all security and system accounts required during the test phase (DRD

974MA-007). The contractor shall coordinate with each module to define a set of system performance requirements (DRD 974MA-007). The contractor shall develop a performance and scalability test plan in conjunction with each module project (DRD 974MA-007). Existing performance and scalability testing tools shall also be utilized. The contractor shall conduct the performance and scalability test in support of each module project.

4.2.1.7   Operations Planning

The contractor shall define the operational processes required and coordinate their implementation with the Module Project. The Module Project Operations Plan, Service Level Agreement (SLA) and Center Operational Level Agreements (OLA), defining how the system will be supported during production, shall be developed concurrently during the Agency Design and Pilot phases of each Module Project (DRD 974MA-007). This shall include the development of training plans to ensure that the Competency Center staff are prepared to operate the new module as described in section 4.3.

4.2.1.8   Systems Support

The contractor shall provide the system resources (e.g., databases, application instances, etc.) to be utilized by each module project and respective Implementation contractor in conducting Agency design activities. The contractor shall utilize defined, disciplined operational processes to operate the development and test environments during the Design phase.

4.2.1.9   Agency Reporting

In accordance with the responsibilities as described in section 4.1.3.2, the contractor shall work closely with each module project and respective implementation contractor to analyze Agency reporting requirements in the context of the Information Delivery Architecture. The contractor shall coordinate with the Agency Process Team and implementation contractor as module reporting requirements are developed. The contractor shall be responsible for designing, developing and implementing the reporting solution. The contractor shall develop and implement the data model, metadata definitions, and data structures necessary to support the defined Agency reports.

4.2.2   Agency Rollout

The purpose of the Agency Rollout phase is to implement the solution developed during the Agency Design Phase at each of the NASA Centers. Each module project will have a defined rollout schedule.

4.2.2.1   Detailed Technical Architecture

In accordance with section 4.2.1.1, the contractor shall implement the module technical architecture that is represented by the deployment of hardware, software, communication, and security components that are necessary to execute the application.

This shall include all centralized data center components as well as any distributed components at other NASA Centers.

4.2.2.2 Configuration Support

The contractor shall provide the tools and underlying system environments (e.g., Development, Test, Staging, Production) necessary to support the process team and its Implementation Contractor in conducting rollout activities at the Centers. The contractor shall establish an effective working relationship with both entities so that requirements may be understood and translated into each module's work plan for rollout execution in a timely manner (DRD 974MA-006).

4.2.2.3 Business and Application Architectures

The contractor shall coordinate with each module's process team to update and maintain the IEMP Business and Application architectures as described in sections 4.1.1 and 4.1.2 to reflect the Center design as approved by the module project steering committee (DRD 974MA-007).

4.2.2.4 Center Interfaces

The contractor shall coordinate all analysis, design, development and testing activities for interfaces between IEMP modules and Pilot Center systems. The contractor shall coordinate with the Agency process team, implementation contractor, and owners of the interfacing system in the definition, development, and testing of these interfaces. The contractor shall lead the process team through an analysis phase that defines the interface business scenarios; interface edits and processing rules; and the roles and responsibilities of the Contractor, the Module project implementation contractor, and the Pilot Center system owners/contractors for the design, development and management of the interfaces. The contractor shall develop all software components that must be built in the new IEM module or in the EAI tool to support the Center interfaces. The interfaces shall be designed and developed in accordance with the IEMP Integration Architecture and Methodology.

4.2.2.5 Testing

The Agency Rollout phase will include system integration testing at each Center. The contractor shall support system integration testing at each Center by assisting testers with execution of Agency interfaces, bolt-on interfaces, extensions, reports, and any Center specific interfaces, extensions, or reports that are developed during the Agency Rollout phase. The contractor shall also provide fixes for approved system discrepancies related to these components. The contractor shall provide the servers, databases and application instances to be utilized by the module projects in conducting unit, system, and integration testing. The contractor shall manage all security and system accounts required during the test phase (DRD 974MA-007).

4.2.2.6   Center Reporting

In accordance with the responsibilities as described in section 4.1.3.2, the contractor shall coordinate with each module project and respective implementation contractor to analyze Pilot Center reporting requirements. The contractor shall be responsible for implementing the defined reporting solution at the Center and developing Center specific reports required to support Agency rollout.

4.2.2.7   Center Training

The contractor shall be responsible for defining the technical architecture for the tools that will be utilized in the development of training materials (DRD 974MA-007). The contractor shall insure that automated training capabilities can be deployed consistent with the Agency's IT architecture standards. The contractor shall also deploy and manage an instance of the system that will be utilized by the module project and implementation contractor in the execution of application training.

4.2.2.8   Center Data Conversion

The contractor shall coordinate with the module project to understand the volume of data to be migrated and the potential impact on system scalability and performance. The contractor shall also maintain an awareness of functional configuration decisions that are made during Agency Design and the potential performance and scalability impacts of those decisions. As directed by the COTR, the contractor shall provide data conversion tools to the module project.

4.3   OPERATIONS AND SUSTAINING SUPPORT

The contractor shall provide operations and sustaining support upon completion of the implementation stabilization period for each module project. The contractor shall provide a Competency Center (CC) for centralized operational support. This support shall include: business process, user interface, application functional, application development, application operations, and infrastructure. The operations and sustaining support performance standards are defined in each module's Service Level Agreement (DRD 974MA-007).

4.3.1   Business Process Support

The contractor shall assist the NASA business process experts in the Competency Center by supporting customers in the execution of standard NASA business processes within each IEMP module. The business processes are defined by the Agency Process Team during implementation and maintained by an Agencywide configuration control board when the system is operational.

4.3.2   User Interface Support

The contractor shall coordinate with each Center's NASA and contractor desktop service providers during the lifecycle of each module project to optimize the

Center's readiness for implementation. After the contractor has completed testing of each application release, it shall stage all components (software, release notes, etc.) on the IEMP software distribution server and notify designated Center contacts of general availability.

4.3.3   Application Functional Support

The contractor shall perform application functional support for each module after completion of the implementation stabilization period. In providing this support, the contractor shall:

a. Possess detail application knowledge.
b. Perform software configuration tasks.
c. Generate queries and basic reports.
d. Develop and maintain security management processes (DRD 974CD-001).
e. Provide Level II help desk support for the application.
f. Maintain end-user training plans and materials (DRD 974MA-007). The contractor shall maintain training materials and job aids that are used Agencywide. The Centers will be responsible for maintaining any Center-specific training materials.
g. Maintain the configuration tables that are defined as Agency configuration items.
h. Maintain all master data that is defined as centrally maintained.
i. Assess the impact of proposed changes to the baselined system.

4.3.4   Application Development Support

The contractor shall perform application development support for each module after completion of the implementation stabilization period. To accomplish this tasking, the contractor shall:

a. Use vendor-provided or other third-party tools to enhance the application.
b. Build extensions to the core software or augment with third party products.
c. Integrate the ERP solution with other applications or legacy systems.
d. Develop enhanced information delivery and reporting capabilities.
e. Assist in solving problems that relate to the technical characteristics of the ERP package.
f. Provide break/fix support for custom developed extensions, reports, and interfaces.

As a function of this support, the contractor shall define and implement a software release management strategy that incorporates enterprise requirements for change request, change control, and configuration management.

4.3.5 Application Operations Support

The contractor shall perform application operations support for each module. The contractor shall be responsible for:

a. System software (operating system, database and application) licensing, administration, installation, configuration and maintenance.
b. Monitoring availability and performance of the ERP system (application, operating system, database servers and network)
c. Monitoring of available vendor application patches.
d. Analysis of potential impacts of vendor supplied patches.
e. Application of vendor supplied patches.
f. Assisting with planning and support of efforts for major release upgrades.
g. Database administration.
h. Print management.
i. Workflow management.
j. Job scheduling.
k. Performing operating system, database and application security administration.
l. Service Level Agreement (SLA) reporting (DRD 974MA-006).

4.3.6 Infrastructure Support

The contractor shall provide enterprise support for the hardware and network systems and services including the application and database servers utilized by the ERP applications. The infrastructure support shall include:

a. Hardware acquisition, installation and maintenance.
b. Planning and testing disaster recovery (DRD 974MA-007).
c. Storage management (allocation, backups, restores, archiving).
d. Network performance monitoring.
e. Asset Management for all IEMP information technology assets (DRD 974MA-007).

The IEMP infrastructure support described above is provided within sections 3.3, 3.4, 3.6, 3.7 and 3.8 of the PWS.

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5. MSFC INFORMATION SERVICES

The MSFC Information Services include those CIO mission requirements that service the MSFC customer base. This includes applications and web services, midrange computer systems, telecommunications, IT security, audiovisual information, documentation repository, hardware maintenance, IT procurement, and customer support services. The contractor shall meet, measure and report the service-level objectives and performance for each of the services defined in Section 5 of this PWS. The contractor shall provide self-assessment reports for these services in accordance with DRD 974MA-010.

5.1 MSFC APPLICATIONS AND WEB SERVICES

The contractor shall provide computer applications and web services for MSFC customers. These services shall include development, sustaining support and production support in compliance with established software and web standards. The applications and web descriptions shall be maintained in the Applications and Web Services Manual in accordance with DRD 974MA-007.

Development and sustaining support includes definition and specification, requirements analysis and feasibility studies, design and development, configuration management, user assistance and training, documentation, ongoing maintenance (repairs and upgrades), other operational support, and replacement or retirement. For non-Outsourcing Desktop Initiative for NASA (ODIN) commercial-off-the-shelf (COTS) applications, this support includes evaluation, procurement, installation, integration, testing, training, user assistance, administration and other operational support. This service also includes application-related consulting, subject matter technical experts, and technical management.

These services also include data preparation, data entry, initiation and monitoring of production programs, user assistance, and generation, review and distribution of reports.

The contractor shall provide the means, in conjunction with Agency efforts, to foster web site compliance with all Federal laws and Agency and Center policies. In addition, the contractor shall provide the means to audit the entire MSFC web environment to help ensure legal and policy compliance pertaining to Federal websites, whether the site is developed and/or maintained by the contractor or not. These services shall include web site development, hosting and maintenance, and searching and indexing.

The contractor shall perform Data Administration (DA) in the planning, organization, design, control, and documentation of data resources for all CIO-supported systems. In performance of this function, the contractor shall:

a. Establish and implement consistent overall DA strategies, such as data definition, logical data modeling, data resource life cycle management, data security, data integrity, and quality assurance.

b. Establish, implement, and maintain a DA program that incorporates the following subelements: DA policies, procedures and standards, data architecture, data dictionary and models, orientation and training, and quality assurance (DRD 974MA-007).

The contractor shall integrate the delivery of applications and web services to the maximum extent feasible. All services to be provided may be routinely added or deleted throughout the period of performance of this contract. These changes are considered within the scope of the PWS and shall not, in general, be construed as changes within the meaning of the "Changes – Cost-Reimbursement – Alternate II" clause of this contract as long as the total number of applications and websites to be provided fall within the following parameters:

Category*	Category Description	Number of Applications/Websites
1	**MSFC-wide application service or web site, critical or highly visible or complex application/web service.**	**36 – 50**
2	**Medium scale application service or web site, less complex, with medium criticality**	**55-95**
3	**Administrative and support application service/web site, or small user community**	**155-245**

* See Appendix B

The contractor shall provide Applications and Web Services Reports in accordance with DRD 974MA-006.

5.1.1 Product Line Organizations

The contractor shall provide applications and web services for MSFC's product line organizations that include the Space Transportation Directorate, the Flight Projects Directorate, the Science Directorate, the Space Shuttle Projects Office, and the Second Generation Reusable Launch Vehicle Project Office. Examples of these applications services are NASA Structural Analysis (NASTRAN) support, Advanced Concepts support, Systems Administration, Dynamic Data Analyzer production support, Virtual Research Center support, National Space Science and Technology Center (NSSTC) support, Microgravity applications, Space Science Applications, and Space Shuttle Project Office support. Examples of web sites developed for these organizations include internal and external sites for Flight Projects, the Microgravity homepage, the site for the g-LIMIT research, internal and external sites for Space Transportation, and the Prop Module research site.

5.1.2   Support Organizations

The contractor shall provide applications and web services for MSFC's support organizations that include the Engineering Directorate, the Center Operations Directorate, and the Customer and Employee Relations Directorate. Examples of these applications services provided to the Engineering Directorate are NASTRAN support, Structural Load Test Measurement Acquisition System (SLTMAS), Engineering Technology Development Office Database support, Antenna Range Data Collection, Materials and Processes Technical Information System (MAPTIS), Integrated Manufacturing Project Planning and Control System (IMPACS), Electromagnetic Compatibility (EMC) support, Global Reference Atmospheric Model (GRAM) support, NASA Standards support, Configuration Management, and the Integrated Engineering System (IES).

The contractor shall provide applications services to the Center Operations Directorate such as the Management Information Control System (MICS); the Center Operations Services Management Information System (COSMIS); the Computerized Maintenance Management System (CMMS); the Marshall Calibration Management System (MCMS); the Service Request System (SRS); the Computing and Communications Asset Information Management System (CCAIMS); the Problem Management and Dispatch System (PMDS); the MSFC Employee Data Information System (MEDIS); and the site-unique portions of NASA Equipment Management System (NEMS), NASA Property Disposal Management System (NPDMS), and NASA Supply Management System (NSMS).

The contractor shall provide applications services to the Customer and Employee Relations Directorate such as the MSFC Personnel Information System (MPIS), the Retirement Annuity System (RAS), the Personnel Awards System (PAS), Electronic Meeting System (EMS) support and site-unique portions of the NASA Payroll/Personnel System (NPPS).

Examples of web sites developed for these organizations include internal, external, and customer focused sites for the Engineering Directorate, as well as, the Center Operations Directorate; highly specialized educational sites; center historical sites; and sites specifically designed for news media relations

5.1.3   Office of the Director and Staff Offices

The contractor shall provide applications and web services for MSFC's Office of the Director and the staff offices of Procurement, Chief Financial Officer (CFO), Systems Management, Safety and Mission Assurance, Equal Opportunity, and Chief Counsel. Examples of applications services provided to these customer organizations are the Director's Office support, the Centerwide Action Item Tracking System (CAITS), CFO core applications support, the MSFC Resources Planning Tool (MRPT), and the Procurement Data Warehouse System (PDWS). Examples of web sites developed for these organizations include internal sites for center staff notes and center events, collection of charitable gifts from center employees, presentations and charts for center

executives, equal employment opportunity outreach, export control and safety information.

5.1.4   Business Information Systems Solutions

The contractor shall provide MSFC customers with process and integration improvements and automated solutions. The contractor shall provide integrated solutions suitable for MSFC projects, programs, directorates, and institutional business customers. The Business Information Integration solutions shall include, but not be limited to, the following: 1) Accounting Resources System (ARS); 2) Workforce Information Management System (WIMS); 3) Rosetta comprehensive crosswalk system; and 4) the Marshall Resources Planning Tool (MRPT). The contractor shall extract data from multiple data sources, including IEM modules, for integrated solution support with automated reports.

5.1.4.1   Application Solutions Development

The contractor shall provide integrated solutions suitable for all MSFC projects, programs, directorates, and MSFC institutional business customers. The solutions developed shall include, but are not limited to the following: 1) elevation of the Accounting Resources System (ARS) application to the level that will support Center requirements with new and enhanced reporting and graphics capabilities; 2) evaluation and development of the Rosetta concept for the deployment of financial WBS, and the program technical WBS database for the MSFC Business offices applications; 3) provision of an overall guideline management and tracing capability; and 4) evaluation and development of an automated utilization-based allocation and rate generation system for CFO supported business customers. The contractor shall also provide administrative application support for CaER. The contractor shall report monthly the project status and import data from IEMP Business Warehouse applications such as RPS and ARS (974MA-012).

5.1.4.2   Systems Support & Sustaining Engineering

The contractor shall provide the overall management effort required for budget integration and the study of logical relationships among RPS, WIMS, MRPT, and IEM modules and others. The contractor shall also provide application mentoring and sustaining support for this effort. The contractor shall provide MSFC Center resource data to other systems such as the Earned Value Management System. The contractor shall provide reports relating to the importing of actuals from IEMP BW into applications such as RPS and ARS (974MA-006). The contractor shall develop an automated monthly Resource status smartbook and presentation structure. The contractor shall provide hands-on training, with resource material, for business information application users. The contractor shall provide integration services supporting project activities including retrieval, analysis, and communication of project information, supporting project workshops and conferences, and supporting project reviews and reports.   Finally, the contractor shall provide overall change management for business solutions. The contractor shall report monthly the project status and import data from IEMP Business Warehouse applications such as RPS and ARS (974MA-012).

5.1.4.3 Configuration Control Support

The contractor shall establish and facilitate the operation of a Level II Configuration Change Board, a Level III Document Control Board (DCB), and a software configuration control board for control of application solutions created for the Chief Financial Office (CFO). This effort shall include development of all appropriate board process documentation and secretariat duties as outlined in NWI 8040.2 and MPG 7120.3. The contractor shall report monthly the project status and import data from IEMP Business Warehouse applications such as RPS and ARS (974MA-012).

5.1.4.4 Maintenance Support

The contractor shall provide daily support as required in support of, at a minimum, the following maintenance activities: 1). maintenance and enhancement of monthly planned versus actual and other status reporting applications such as ARS and RPS; and 2) maintenance and enhancement of the RPS application in support of planned vs. actual resource formulation reporting alone with yearly POPs and Ops activities, Travel System maintenance, Guideline Tracer maintenance and enhancement. The contractor shall evaluate and maintain awareness of the upcoming IEM modules and other work activities pertaining to IEMP, particularly as it pertains to transitioning ARS and other MIS resources to the IEMP environment. The contractor shall ensure that RPS, ARS, Guideline Tracer, and other solutions are accessible by all supporting Centers, as applicable. The contractor shall report monthly the project status and import data from IEMP Business Warehouse applications such as RPS and ARS (974MA-012).

5.2   COMPUTER SYSTEMS SERVICES

The contractor shall provide midrange computer systems services to support the application services described in Paragraph 5.1. Computer systems services encompass providing hardware, operating systems, other systems software, computer operations, hardware/software maintenance, technical assistance, and other requirements for applications execution. These services include operation/maintenance of existing systems, acquisition/implementation of COTS products, database administration, and development of unique systems in compliance with established architecture standards. The system configuration documentation shall be maintained in the online Midrange Node Book in accordance with DRD 974MA-007.

5.2.1   Business, Engineering and Scientific Midrange

The contractor shall provide computer systems services to support MSFC's administrative, business, engineering and scientific applications. These applications execute on midrange computers identified in Appendix A, Category I. In providing these services, the contractor shall:

    a. Provide hardware and systems software enhancements to meet customers' requirements in response to changing workloads and technologies.

b. Provide and maintain operating systems, database management systems, compilers, libraries, and all other systems software necessary for the operation, execution and security of the computer and communications systems.

c. Operate and maintain computer, peripheral, data acquisition, and communications systems, to include system initializations and recoveries, storage management, and print production and dissemination.

d. Provide system administration such as program and data security, scheduling, and quality control.

e. Provide security support as required by NASA, in particular, adhering to new security bulletins and installation of patches to fix known vulnerabilities as well as working within restrictions involving firewalls and other security-related constructs, maintaining compliance with NASIRC bulletins, utilizing Secure Shell for host authentication, user authentication, and encryption, and the use of TCP/IP wrappers and System monitoring for anomalies and security break-in attempts.

f. Provide management of users to include: addition and deletion of userids, disk quotas, accounting and access control, utilization reports, consultation on advancing technologies, video and imaging support and data visualization (DRD 974MA-006 and DRD 974MA-007).

g. Provide backups and restoration of the systems including all system files, file systems, directories, and/or user files.

5.2.2   User-Owned Midrange

The contractor shall provide computer systems services to support user owned midrange systems. These systems are identified in Appendix A, Category II and III. In providing these services, the contractor shall:

a. Provide hardware and systems software enhancements to meet customers' requirements in response to changing workloads and technologies.

b. Provide and maintain operating systems, database management systems, compilers, libraries, and all other systems software necessary for the operation, execution and security of the computer and communications systems.

c. Operate and maintain computer, peripheral, data acquisition, and communications systems, to include system initializations and recoveries, storage management, and print production and dissemination.

d. Provide system administration such as program and data security, scheduling, and quality control.

e. Provide security support as required by NASA, in particular, adhering to new security bulletins and installation of patches to fix known vulnerabilities as well as working within restrictions involving firewalls and other security-related constructs, maintaining compliance with NASIRC bulletins, utilizing Secure Shell for host authentication, user authentication, and encryption, and the use of TCP/IP wrappers. System

monitoring for anomalies and security break-in attempts must be accomplished.

f. Provide management of users to include as required by the users: addition and deletion of userids, disk quotas, accounting and access control, utilization reports, consultation on advancing technologies, video and imaging support and data visualization (DRD 974MA-006 and (DRD 974MA-007).

g. Provide backups and restoration of the systems including all system files, file systems, directories, and/or user files.

5.2.3   Test Area

The contractor shall provide computer systems operators to support MSFC's Test Area data acquisition systems. These systems, support MSFC's East and West Test Areas, include various HP Alpha computers, MODCOMP computers, PC's, plotters, printers, disk drives, tape drives, and controllers. These data acquisition systems record raw test data, convert the data to engineering units, display tabulated and graphical results during the tests, and provide post-test conversion and storage of data for distribution. These systems are operated during the day shift and during test periods.

5.2.4   National Space Science and Technology Center (NSSTC)

The contractor shall provide engineering, software and hardware maintenance, operations, and system administration for all the NSSTC.

5.2.4.1   Infrastructure Systems

In support of the infrastructure systems, the contractor shall:

a. Monitor the physical cable plant, including 24x7 monitoring for environmental change in key areas; provide Uninterruptible Power Supply (UPS) maintenance and engineering; and dark fiber maintenance and engineering between MSFC and NSSTC.

b. Engineer, operate and maintain NSSTC routers, firewalls, switches, Virtual Private Network (VPN) and dial-in devices, and IP Telephony systems.

c. Engineer, operate and maintain infrastructure peripherals, such as network printers, electronic facsimile system, scanners, wireless access points and network based TV (IPTV) screens and systems.

d. Engineer, operate and maintain infrastructure server systems, including web, e-mail, domain, IP Telephony and unified messaging servers, domain controllers for Active Directory, and other servers supporting core network functions (see services below).

5.2.4.2   Infrastructure Services

In support of the infrastructure services, the contractor shall:

a. Maintain the Domain Name Service (DNS), Dynamic Host Control Protocol (DHCP), Windows Internet Naming Service (WINS), Radius authentication protocol, Microsoft Active Directory, and Network Time Protocol support (Stratum 0).
b. Operate and maintain the VPN server and client software and Dial-in service.
c. Provide integrated electronic mail, voice mail and personal fax services.
d. Provide printer and user data storage services.
e. Provide backup services for all infrastructure systems. The contractor shall maintain an offsite storage facility for backup tapes for disaster recovery.
f. Provide port-level security (switch level) administration.
g. Provide wireless access services engineering and maintenance.
h. Provide system administration for the following systems:
     1) SGI.
     2) Linux.
     3) Solaris.
     4) W2K/NT/XP.
     5) Win 9x.
     6) Macintosh (9.x and OSX+).
     7) OpenVMS.

5.2.4.3 Desktop User Services

In support of the desktop user services, the contractor shall:

a. Provide engineering, hardware, operating system installation, troubleshooting, and reconfigurations.
b. Maintain user software for desktop-based antivirus scanning and operating system security patches.
c. Install, relocate, configure, and maintain IP Telephony (Voice over IP) services.
d. Provide centralized application services, including user data areas, applications, system application downloads and patches.
e. Provide backup of user desktop data areas as directed by the COTR.

5.3 CUSTOMER REQUESTED HARDWARE MAINTENANCE

The contractor shall also be responsible for hardware maintenance of MSFC's non-ODIN computer equipment, including laboratory equipment, referenced in Appendix A, Category III. In providing this service, the contractor shall:

a. Perform repairs and other Remedial Maintenance (RM) following equipment failure in accordance with approved Operability/Maintainability Plan (prepared in accordance with DRD 974RM-001).

b. Perform scheduled Preventive Maintenance (PM) checks and repair equipment malfunctions in accordance with approved Operability/Maintainability Plan (prepared in accordance with DRD 974RM-001).

c. Install and relocate IT computer equipment.

d. Maintain systems through engineering changes and updates.

5.4   TELECOMMUNICATIONS SERVICES

The contractor shall provide telecommunications services to support the MSFC and Michoud Assembly Facility (MAF) customers. These include telephone, facsimile, and other services.

5.4.1   Telephone Service

The contractor shall provide telephone services at MSFC and MAF. These services include operation/maintenance of existing capabilities, development or acquisition of enhancements, and implementation of enhancements. In providing this service, the contractor shall:

a. Operate and maintain the telephone and voice mail systems and associated equipment.

b. Provide telephones and associated features such as call forwarding, conferencing, call pickup, transfer, voice mail, and other features.

c. Install, relocate, configure, and maintain the telephone instruments and other end-service equipment and capabilities.

d. Install, configure, and maintain small conferencing units for the office environment.

e. Provide overhead paging service capable of broadcasting voice messages in specified areas.

f. Provide pager services, cellular telephones and wireless communication services for authorized personnel.

g. Operate and maintain the voice over Internet Protocol (IP).

h. Provide specification of requirements, design, implementation, procurement, and operations of local telephone service, including dial-tone, inbound/outbound trunking, fiber to near-site locations, and access to 911.

i. Provide specification of requirements, design and interface to long distance switched voice and data services, provided by FTS2001.

j. At MSFC only, provide operator assistance for placing international calls, directory assistance, and other operator-required functions.

k. At MSFC only, compile and prepare the MSFC Telephone Directory (DRD 974MA-007).

l. Provide and maintain telephone service for fire rescue locations as designated by the MSFC Safety Office. Fire rescue locations are designated in multi-story buildings to assist the handicapped with evacuation in case of a fire.

m. Provide, test, and maintain power fail telephones. Power fail telephone circuits do not connect to or go through the MSFC telephone system. The power fail telephones shall operate in the event the MSFC telephone system loses power or becomes inoperable.

5.4.2   Facsimile Service

The contractor shall provide facsimile services that include MSFC and MAF facsimile. These services include maintenance of existing capabilities, development or acquisition, and implementation of enhancements. In providing this service, the contractor shall:

a. Maintain the existing facsimile machines and services.
b. Procure, install and maintain facsimile hardware and services including those appropriate for the transmission of Government classified documents.
c. Procure, install and maintain facsimile hardware and software to integrate this service with MSFC electronic mail services.

5.4.3   Other Services

The contractor shall provide other services required to meet customer requirements. These services include maintenance of existing capabilities, development or acquisition, and implementation of enhancements. In providing these services, the contractor shall:

a. Provide fixed, portable, and mobile radios.
b. Provide radio frequency spectrum management service.
c. Provide and maintain interbuilding cable systems and system documentation (DRD 974MA-007).
d. Provide and maintain the Emergency Warning System (EWS), the Marshall Access Control System (MACS), and the Video MACS (VMACS).
e. Provide emergency telecommunications and operations support services during disaster/emergency situations such as fire, explosion, accident, bomb threat, civil disturbance, terrorist-related incidents, flood, ice, snow, and tornadoes.
f. Operate and maintain a central distribution capability for voice, video, and data products (incoming and generated).
g. Provide and maintain dedicated transmission services between local customers and host computer systems.
h. Provide and maintain cable distribution systems and system documentation (DRD 974MA-007).
i. Provide, set up, and maintain portable audio-visual equipment for special events.
j. Design, develop, implement and maintain conference room capabilities.

k. Schedule and operate the Contracting Officer's Technical Representative (COTR) designated video teleconferencing rooms.

l. Schedule the conference facilities located in Morris Auditorium, Conference Rooms P106, P110, and 815 in building 4200, and operate the facilities, including the audio/visual equipment.

5.5 INFORMATION TECHNOLOGY (IT) SECURITY SERVICES

The contractor shall provide IT Security services to the MSFC customers, including the NSSTC (an offsite facility in Huntsville). These services include maintenance of existing capabilities, development or acquisition, and implementation of enhancements. In providing these services, the contractor shall:

a. Ensure that all IT resources and components administered by the contractor are secured to minimum requirements in accordance with NPR 2810.1.

b. Provide early warning, detection and resolution of vulnerabilities or security incidents. This includes threat notification responses, risk management, network monitoring, centralized database collections, security response tracking and analysis, and forensics of IT Security incidents.

c. Develop and test prototypes of IT security tools, techniques, and training.

d. Install and maintain firewalls for the MSFC and NSSTC private and public networks.

e. In concert with Agency requirements, manage and maintain secure authentication services for MSFC customers, including token-based and smart card services (see section 3.3.5).

f. Develop, evaluate, and test prototypes of IT security tools, techniques, and training specific to the MSFC and NSSTC environment.

g. Perform risk assessments, vulnerability scans and assist with system security life-cycle development planning, security plan composition and maintenance, and other procedural/technical protective controls for MSFC and NSSTC IT resources (DRD 974CD-001).

h. Assist with the implementation and administration of specific IT management disciplines, standards, and conventions as promulgated in Federal and Agency statutes, regulations, policies, procedures, administrative instructions, information bulletins, and directives.

i. Provide support for disaster recovery planning, contingency planning, vulnerability analysis, risk and exposure management, corrective action planning, sensitive disciplines, training, and reporting.

j. Provide rehabilitation support for IT resources impacted by hostile code or malicious software, including:
   1) Detection, validation and eradication services for MSFC and NSSTC information systems;
   2) Restoration of the system to its pre-infected configuration;
   3) Reallocation of resources to ensure the efficient and timely eradication of widespread infections.

k. Maintain awareness of, monitor for, and provide protection against denial of service attacks, intercepted transmission, and unauthorized access or intrusion into NASA resources.

l. Handle, protect, and track administrative Privacy Act Information and proprietary data in accordance with applicable regulations and procedures (Attachment J-10).

m. Collaborate with other entities to effect a strong IT security posture.

n. Assure compliance with architecture standards and guidelines (Attachment J-10).

o. Ensure that all personnel requiring access to DoD Classified information or networks have a minimum of a final Secret Security clearance or higher.

p. Provide support for forensic investigations to MSFC Protective Services and other law enforcement agencies.

q. Provide engineering for NASA standard PKI certificate servers located at MSFC.

r. Implement MSFC conversion to and operation of Agency standard IT resource account management system.

5.6   DOCUMENTATION REPOSITORY SERVICES

The contractor shall provide documentation repository services required to meet customer requirements. These services include operation/maintenance of existing capabilities, development or acquisition, and implementation of enhancements. In providing these services, the contractor shall:

a. Operate the central Documentation Repository.

b. Receive, manage, store, and distribute officially released engineering drawings, associated technical documentation, and standardization documentation.

c. Transition from paper-based to integrated electronic documentation management, including receiving, indexing, storing, distributing, and appropriate archiving.

d. Maintain proprietary, restricted-access and export control document files in accordance with relevant Marshall and NASA Directives and related regulations and guidelines.

e. Maintain and transition legacy master microfilm aperture card file and microfiche files.

f. Prepare in acceptable media and formats any official record documents being transmitted, through coordination with the MSFC Records Manager, to the National Archives and Records Administration (NARA) for archival purposes.

g. Maintain the MSFC Records Staging Area (RSA).

h. Operate, maintain, enhance and integrate the Electronic Document Management System (EDMS) in collaboration with MSFC's Configuration and Data Management function.

i.   Provide design, development, conversion and integration support for MSFC Forms.

j.   Support center and Agency electronic business/knowledge management information resource functions, including Scientific and Technical Information (STI) Program, MSFC Technical Report Server (MTRS), electronic forms, records management, and directives.

5.7   AUDIO VISUAL INFORMATION SERVICES

The contractor shall provide centralized management, operations, and production capability for various audio visual information services and products including creation of content, assembly and editing of content, and distribution of content. Audio visual services comprise imaging/photography, television and video, graphics/publications, in-house reproduction, commercial printing procurement, and interactive multimedia. These services include maintenance of existing capabilities, and development or acquisition and implementation of enhancements.

5.7.1   Content Creation

The contractor shall provide the capability to create content in a variety of physical and electronic media. In performance of this function, the contractor shall:

a.   Provide still and motion picture photography and videography for documentation of MSFC ceremonies, programs, component tests, special events, and other customer requirements.

b.   Create graphic, publication, and web content including text, tables, charts, illustrations, still and motion images, photo research and caption, technical or creative writing, and animation adhering to all applicable NASA/MSFC procedural and regulatory guidance.

5.7.2   Content Assembly

The contractor shall provide capabilities to prepare physical and electronic content for eventual distribution. In performance of this function, the contractor shall:

a.   Provide editing capabilities for video and interactive electronic content.

b.   Provide design, layout, editing, and proofing capabilities for graphics/publications for electronic and physical distribution.

c.   Provide editing, proofing, and preparation of still and motion images for electronic and physical distribution.

d.   Provide live television production for internal distribution on MSFC Centerwide television and NASA TV.

e.   Provide support for streaming live and on-demand video and audio to end-user desktops. This includes such things as video-based training, distance learning, and MSFC Centerwide television.

f.   Provide programming of video, audio, text, animation, and graphic elements for interactive multimedia products and Internet distribution.

g. Assist authors of STI in complying with NASA and MSFC standards for publication of manuscripts. Manuscripts and documents must comply with "Guidelines for Documentation, Approval and Dissemination of NASA STI", NPG 2200.2, and include a completed SF 298, Report Documentation Page, and NASA Form 1676, Document Availability Authorization, in the final author package.

h. Maintain existing photographic, visual aids, graphics/publications, reproduction, audio, film, and tape libraries, archives, and databases.

i. Provide research, writing, editing, and imaging services to support the MSFC and NASA image archive web services. Provide coordination with MSFC scientists, engineers, historians, and the public.

5.7.3 Content Distribution

The contractor shall provide numerous physical and electronic means of distributing audio-visual content. In performance of this function, the contractor shall:

a. Provide videotape, CD-ROM, DVD, and other optical and magnetic media duplication of video, still and motion images, and interactive content.

b. Provide photographic prints and electronic files in a variety of sizes, resolutions, and quantities.

c. Provide paper and electronic files of graphics/publications content.

d. Operate the duplicating facilities at MSFC capable of duplicating / printing paper, electronic publishing and electronic content in accordance with Public Law 102-392 and Section 207 of the Joint Committee on Printing (JCP) and Binding Regulations, as well as the Government Printing Office Quality Assurance Through Attributes Program (QATAP) for Quality Level III.

e. Provide commercial printing procurement services in accordance with the MSFC Printing Officer, and through new and existing Government Printing Office (GPO) contracts. Procurement of printing services will be in accordance with Title 44 of the US Code and Public Law 102-392, October 6, 1992 (amended by Public Law 103-283, July 22, 1994), Section 207 and the NPG 1490.5.

f. Provide live television distribution locally on MSFC Centerwide Television and NASA TV.

g. Provide live and on-demand delivery of streaming services to NASA users and the public.

h. Provide conference outreach activities support for technology based industry briefings.

i. Provide lamination, mounting, and matting.

5.8 IT PROCUREMENT SERVICES

The contractor shall provide IT equipment and IT software necessary to fulfill MSFC requirements, within the guidance of the Federal Acquisition Regulation (FAR),

including utilizing government and NASA/MSFC contracts or site software license agreements.

5.9   CUSTOMER SUPPORT

The contractor shall ensure that all customer service elements of this contract are supported. This function shall include the customer support center, service requests, and user training.

5.9.1   Customer Support Center

The contractor shall receive, track, and resolve customer service problems. In performance of this function, the contractor shall:

a. Operate an integrated customer support center 24 hours a day, 7 days a week. The customer support center will work cooperatively with other help desks to resolve all problems regardless of the initial determination of the origin of the problem.
b. Receive all trouble calls and promptly effect resolution.
c. Operate and maintain the on-line status system to query, update, and display information related to problems and resolutions (DRD 974MA-006).
d. Provide feedback regarding problem resolution as requested by the customer.
e. Perform trouble reporting and tracking (DRD 974MA-006).
f. Provide reports of status, summaries, and statistics (DRD 974MA-006).
g. Verify resolution with the customer prior to closing the trouble call.
h. Provide customer information and assistance regarding the use of Center Operations services.
i. Provide user notification of outages and activities.
j. Upon resolution of a trouble ticket/outage of service, provide the customer written information regarding the reason for trouble/outage, corrective actions taken, and relevant information for any follow-on action.

5.9.2   Service Requests

The contractor shall receive, process, and execute customer service requests. In performance of this function, the contractor shall:

a. Operate and maintain the on-line service request system for inputting, assigning, tracking, statusing, and archiving customer service requests as part of the MICS (DRD 974MA-006).
b. Implement only authorized service requests.
c. Provide the necessary coordination between the customer, CIO for funding verification and the technical support functions required to satisfy the request.

d. Provide monthly reports (DRD 974MA-006) to COTR designated personnel that explain status of service requests.

e. Close each service request only after customer notification and acceptance.

5.9.3 User Training

The contractor shall provide training to customers for services developed or implemented under this contract. In performance of this function, the contractor shall:

a. Develop and conduct a formal user-training program to include classes, videotapes, hard copy tutorial information, computer-based tutorial information, and reference information (DRD 974MA-007).

b. Provide specialized training for both hardware and software, where COTS product training is not available.

5.10 INTEGRATED SERVICE DELIVERY SUPPORT

The contractor shall provide the integrated service delivery support functions necessary to perform the services described in Section 5 of this PWS. These functions include: engineering, implementation, maintenance, configuration management, collaboration, and disaster recovery.

5.10.1 Engineering

The contractor shall provide systems engineering and sustaining engineering support functions to perform the services described in this PWS.

5.10.1.1 Systems Engineering

The contractor shall perform systems engineering for existing and proposed systems. Within the scope of this function, a system typically includes the combination of hardware equipment and systems software. Systems software includes operating systems, compilers, database management systems, transaction management systems, switching systems, performance and utilization tracking systems, libraries, utilities, and other software necessary for the operation and execution of IT systems. In performance of this function, the contractor shall:

a. Maintain and update customer requirements (DRD 974MA-007).

b. Perform, in accordance with OMB guidelines for business cases, trade studies to maintain, balance, and optimize requirements allocations across subsystems (DRD 974MA-007).

c. Maintain requirements inventory for all customer subsystems (DRD 974MA-007).

5.10.1.2 Sustaining Engineering

The contractor shall perform sustaining engineering on operational systems that are managed by the contractor. In performance of this function, the contractor shall:

a. Perform system performance studies, recommending appropriate changes to eliminate potential system bottlenecks, resources conflicts and system overloads (DRD 974MA-007).
b. Isolate problems in systems and effect proper resolution, including the reporting, statusing, and documenting of changes (DRD 974MA-006).
c. Perform capacity analysis of existing computational and telecommunication systems (DRD 974MA-007).
d. Provide capacity planning recommendations based on analysis and changes in requirements and technology (DRD 974MA-007).
e. Provide risk analysis and management that shall include continual identification and assessment of technical, schedule, cost, and organizational risks involved with the operation of systems (DRD 974MA-002).

5.10.2 New Service Implementation

The contractor shall provide design and development; systems integration and testing; and implementation support functions for new service implementation. This includes, but is not limited to, documentation, drawings, pricing methodology, budgeting, operations approach, schedule, and training material.

5.10.2.1 Design and Development

The contractor shall design, develop, and prototype IT systems to meet customer requirements. The contractor shall develop and document engineering specifications and drawings for components and systems that implement the designs (DRD 974MA-007). In performance of this function, the contractor shall:

a. Define requirements that shall include collecting and documenting customer (including written buyoff) or system requirements (DRD 974MA-007).
b. Analyze the defined requirements ensuring that functionality, reliability, availability, maintainability, security, affordability, and policies and procedures are addressed. Perform systems engineering trade studies to optimize requirements allocations across subsystems (DRD 974MA-007).
c. Develop designs consistent with generally accepted engineering guidelines and practices.
d. Maximize commonality and the use of COTS components.
e. Coordinate external interface designs with the responsible oversight organization.

f. Conduct design reviews as requested by COTR designated personnel or customers.

g. Develop engineering prototype hardware and software components, subsystems, and systems to verify design and certify requirements.

h. Support the upgrading of the integrated infrastructure for all information systems.

i. Acquire, fabricate, assemble, and modify components, subsystems, and systems.

j. Support partnerships with industry, academia, and government agencies to accelerate the use of advanced technologies to meet NASA requirements.

k. Identify and coordinate local physical and electrical interfaces between the host facility, suppliers, and customers.

5.10.2.2 Systems Integration and Testing

The contractor shall be responsible for integration of hardware and software into operational configurations of computational and telecommunication systems. The contractor shall ensure that all elements of the system cohesively function as a fully integrated, operational system. The contractor shall perform testing of hardware, software, and telecommunication products. In performance of this function, the contractor shall:

a. Ensure customer-established functional requirements are met.

b. Ensure conformance with the applicable federal standards.

c. Ensure interoperability with existing systems.

d. Ensure design concepts are not inadvertently changed during the integration process.

e. Perform verification and validation testing independent of the design organization.

f. Perform technical reviews of integration and testing activities as requested by COTR designated personnel.

5.10.2.3 Implementation

The contractor shall install and integrate hardware, systems software, services and applications software components into fully operational systems and verify satisfaction of the customer's performance requirements. In performance of this function, the contractor shall:

a. Assemble, install, connect, inspect and "stage" the systems.

b. Integrate, verify functionality, and document implementation of the services (DRD 974MA-006).

c. Perform verification testing of the systems under simulated load conditions, and assess failure modes of the systems.

d. Provide the customer written instructions that contain all relevant information for reporting a problem related to the service, equipment or software.

5.10.2.3.1 Installation

In performance of this function, the contractor shall:

a. Install the components into a fully operational configuration to meet the customer requirements.
b. Schedule implementations to minimize disruptions or impacts to services.
c. Verify that the connections, support equipment, and software for the system have been properly installed.
d. Ensure property control requirements (e.g., identification tags and stickers) are met (as defined in the approved Government Property Management Plan, which is prepared in accordance with DRD 974LS-001).

5.10.2.3.2 Assessment and Acceptance Testing

In performance of this function, the contractor shall:

a. Verify that the system is installed properly, and that the system satisfies customer's requirements using test and assessment methods, and written customer buyoff, as appropriate.
b. Conduct an acceptance review with CIO and customers, as requested by COTR designated personnel, presenting a summary of the verification results.

5.10.3   Configuration Management and Control

The contractor shall prepare, implement, and maintain a Configuration Management Plan which describes the technical and administrative functions necessary to identify and document the technical requirements of a system or project, control changes, deviations, and waivers to these technical requirements, and record and report change processing and implementation status in accordance with DRD 974CM-001. The contractor shall maintain as-implemented systems configuration information to include hardware model numbers, software revision levels, user interface details, and circuit details, such as circuit numbers, circuit types, originating and terminating locations, installation date, and service request reference number (DRD 974MA-007).

5.10.4   Maintenance

The contractor shall maintain in a fully operational condition all hardware and software for those systems which the contractor has responsibility (see Appendix A). Items to be maintained, consistent with the categories of hardware and software described in this PWS, may be routinely added or deleted throughout the period of performance of this contract. These changes are considered within the scope of this PWS and shall not, in general, be construed as changes within the meaning of the "Changes -- Cost-Reimbursement -- Alternate II" clause of this contract as long as the total number of hardware items to be maintained (see DRD 974RM-001, Operability/Maintainability

Plan) is not less than 8,000 and not greater than 18,000. In performance of this function, the contractor shall:

    a. Prepare, implement, and maintain the Operability/ Maintainability Plan in accordance with DRD 974RM-001.

    b. Maintain an online system that contains information on operational failures, incidents, discrepancies, and problem disposition and resolution that includes a daily log of all maintenance and repair activities (DRD 974MA-006).

    c. Prepare and deliver status reports (DRD 974MA-006) providing information on outages, such as component involved, period of downtime, and corrective actions.

    d. Compile and maintain a list of key contacts responsible for coordinating and conducting the required hardware and software maintenance functions (DRD 974MA-007).

    e. Maintain warranty protection and conditions for equipment in warranty.

    f. Maintain vendor subscriptions describing and providing updates and enhancements.

    g. Maintain a complete, up-to-date, and accurate list of spare parts and related material necessary to maintain the equipment (DRD 974MA-007).

    h. Ensure availability of parts for both maintenance and production functions.

    i. Maintain a real time, up-to-date service record for each system. The record shall include: the date and type of equipment, service performed, list of parts used and costs, staff-hours utilized, and downtime, or time not available for use of equipment (DRD 974MA-007).

    j. Maintain a working relationship with vendors or other NASA Centers necessary to obtain required items or maintenance in a timely manner.

    k. Maintain up-to-date vendor documentation for all systems (DRD 974MA-007).

    l. Coordinate maintenance activities with customers, other service providers, and other contractors.

    m. Maintain a complete, up-to-date, and accurate list of software licenses.

5.10.4.1 Preventive Maintenance (PM)

The contractor shall perform PM, defined as maintenance performed by the contractor that is designed to keep the hardware and software in proper operating condition. The PM is performed on a scheduled basis, normally during the Principle Periods of Maintenance (PPM) defined for each system in the Operability/Maintainability Plan (DRD 974RM-001).

    a. In performing PM on hardware equipment, the contractor shall:

       1) Develop PM schedules that minimize disruption to customer operations. Provide PM schedules in accordance with DRD 974RM-001.

       2) Perform adjustments, cleaning, lubrication, and replacement of parts as specified according to published maintenance procedures.

3) Install latest releases of Field Change Orders (FCO's) and other hardware updates.
   b. In performing PM to software, the contractor shall:
      1) Acquire, test, and install software updates. Software tests and installations shall normally be performed during scheduled system test periods.
      2) Track and renew system software licenses (DRD 974MA-007).
      3) Evaluate vendor-supplied updates or patches for applicability.
      4) Implement system software releases.

5.10.4.2   Remedial Maintenance (RM)

The contractor shall perform RM, defined as that maintenance performed which results from equipment and software failure. It is performed as required on an unscheduled basis. RM shall be performed on all hardware and software elements specified in this contract. In performance of this function, the contractor shall:

   a. Perform RM promptly after notification that the component is inoperative.
   b. Ensure that the RM is performed to meet the customer's requirements and minimizes operational impact to the customer.
   c. Plan, implement, and enforce operational procedures to ensure that the system continues to operate while any failed component is being replaced. Document operational procedures in the Operability/Maintainability Plan (DRD 974RM-001).
   d. Ensure that the maintenance tools, spares, procedures, skills, and response times are adequate to meet the requirements of the approved Operability/Maintainability Plan (DRD 974RM-001).

5.10.5   Collaboration

The contractor shall establish and maintain contact with internal and external technical working groups consisting of IT professional associations and vendor systems experts to assist in accomplishing its mission.

5.10.6   Disaster Recovery

The contractor shall test the Disaster Recovery Plan (prepared in accordance with DRD 974MA-007) to ensure the orderly recovery from a disaster that may render all or part of information facilities, systems, and equipment inoperable. The contractor shall also test the Continuity of Operations Plan (prepared in accordance with DRD 974MA-007).

APPENDIX A SYSTEMS RESPONSIBILITIES

Category I. CIO Managed Systems for which the Contractor shall have Systems Manager Responsibilities

SERVICE TYPE	SYSTEM NAME	CURRENT MODEL
MSFC Services	Internet Gateway	Sun
	Midrange Computer Systems	IBM RS6000, Compaq DL380, SGI, HP DEC Alpha, Sun
	Test Area Systems	HP Alpha, PCs, MODCOMP
	MSFC Telephone Systems	EADS Northern Telecom PointSpan
	MAF Telephone Systems	EADS Northern Telecom PointSpan
	MAPTIS Systems	Compaq NT and DEC Alpha
	MAPTIS II System	Dell Precision 420 Dual CPU
	Video MSFC Access Control System	Lenel
	MSFC Access Control System	LYNX Intel
	Radio, Paging & EWS	see DRD 974RM-001
	Audio/Video Systems	see DRD 974RM-001
	Infrastructure Security Services (Firewalls, ACE authentication services, risk assessment and scanning)	Cisco, Solaris, Win2K, Linux, SGI, Nokia/Checkpoint
	NSSTC Infrastructure	Cisco (IOS, CAT OS, embedded), W2K/NT4/W98, SGI, Linux
	NSSTC User Applications Systems Support	SGI, Linux, OpenVMS, W2K, Solaris

APPENDIX A
SYSTEMS RESPONSIBILITIES (CON'T)

SERVICE TYPE	SYSTEM NAME	CURRENT MODEL
Agencywide Services	All Development Tools	see DRD 974RM-001
	NACC	IBM 9672-RB6, IBM 3490, IBM 3480, STK 9500, STK VSM, STK 9310, Sun V880, IBM P series
	Midrange Computer	IBM RISC 6000, Compaq, Sun, Dell 2650, Sun V480
	IEMP	Compaq DL-360, DL-380 Compaq 1850R, 3000, 6000, 6500 and 7000 Dec Alpha 4100 and 8400 Sun E10000, Sun 6500, Sun 4500, Sun 450, Sun V880, Sun SPARC 2 and 10, Sun Ultra 5, 10 and 60 Various Gateway and Micron Workstation class servers

APPENDIX A
SYSTEMS RESPONSIBILITIES (CON'T)

SERVICE TYPE	SYSTEM NAME	CURRENT MODEL
Agencywide NISN	PSLA database NISN Service Request System	SUN UNIX, Remedy
	Intrusion detection sensors	CISCO PIX, Checkpoint
	Video Teleconferencing System (ViTS) ViTS Rollabout (VRA) system	Video codecs, viewstations, mixers, Audio/Video cassette recorders, cameras, video controllers, remote controls, character generators, terminal servers, video monitors, amplifiers, display units, document cameras, audio/video matrix switch, camera controllers, echo cancellers, plasma screens, touch screens, projectors, multipoint control unit (MCU); Polycom
	Video Conferencing Reservation system (VCRS)	Oracle with web interface. NT server with access to an ADE RISC 6000 database server
	Voice Teleconferencing Systems	Polycom voice conferencing units, audio modules, audio mixers, audio synchronizers
	Voice Teleconferencing Service	Polycom, Shure, Gentner audioconferencing units

APPENDIX A
SYSTEMS RESPONSIBILITIES (CON'T)

SERVICE TYPE	SYSTEM NAME	CURRENT MODEL
Agencywide NISN, con't	Mission Voice Switching System (VSS)	2048 port digital switch
	Routed Data Service	Cisco/Juniper/Bay routers, patch panels, modems, fiber modems/multiplexers/repeaters, inverse multiplexers, channel service units, channel banks, CSU/DSUs, disk drives
	Mission Network Service Assurance Plan (NSAP) backbone	Conversion devices
	High Rate Data/Video Service System	Statistical Multiplexer
	NASA Directory Service	Sun Solaris, Syntegra Mail*Hub
	NISN Activity and Outage Posting and Notification System (AOPNS) NISN Mission outage notification system (MONS) Flash Reporting System	Sun UNIX
	Enterprise Network Management Center (ENMC)	Sun SPARCstations

APPENDIX A
SYSTEMS RESPONSIBILITIES (CON'T)

Category II. CIO Managed Systems for which the Contractor shall have Limited Responsibilities

SERVICE TYPE	SYSTEM NAME	RESPONSIBILITIES
MSFC Information Services	Photographic and Visual Service System	Operations
	IES	Software Maintenance & Sustaining Engineering
Agencywide	Secure voice teleconferencing system	Operations & Maintenance
	SMARTCards	Operations & Maintenance

Category III. Non-CIO Managed Systems for which Contractor shall have Limited Responsibilities

SERVICE TYPE	SYSTEM NAME	RESPONSIBILITIES
MSFC Information Services	User owned midrange	Operations, and Maintenance
	All other MSFC IT Computer Equipment (except HOSC)	Hardware Maintenance (see DRD 974RM-001)
Agencywide, NISN	Voice teleconferencing service	Interface with provider & reporting
	VoTS scheduling system	Interface with provider & reporting
	NISN Mission video system	Interface with provider & reporting
	Video Teleconferencing Service	Interface with provider & reporting
	WAN Transmission Services	Interface with provider & reporting
	High Rate Data/Video Service System	Interface with provider & reporting
	FAX Broadcast Service	Interface with provider & reporting

APPENDIX B APPLICATIONS/WEB CATEGORY DESCRIPTIONS

CATEGORY	DESCRIPTION
1	NASA-wide or MSFC-wide application service or web site, critical or highly visible or complex application/web service.
2	Medium scale application service or web site, less complex, with medium criticality
3	Administrative and support application service/web site, or small user community

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Mod. 69	J-2-9				
Mod. 69	J-2-25 – J-2-28				
Mod. 69	J-2-38 – J-2-48				

MSFC - Form 3461-2 (Rev August 1970)

UNIFIED NASA INFORMATION TECHNOLOGY SERVICES (UNITeS)
Data Requirements List

DRD	DATA TYPE	TITLE	OPR
CD – Contractual Data			
974CD-001	2	Information Technology Security Plan	IS05
974CD-002	3	Employee Listing	PS10
974CD-003	3	Technology Reports (NFS 1852.227-70)	CS30
CM - Configuration Management			
974CM-001	2	Configuration Management Plan	ED43
LS – Logistics Support			
974LS-001	2	Government Property Management Plan	IS03
MA – Management			
974MA-001	1	Management Plan	IS01
974MA-002	2	Risk Management Plan, Analysis, and Tracking Reports	QD10
974MA-003	2	Major Information Systems Portfolio	IS01
974MA-004	2	Work Breakdown Structure (WBS) and WBS Dictionary	RS40
974MA-005	3	Financial Management Report (533M)	RS40
974MA-006	See DRD	Reports	IS01
974MA-007	See DRD	Documentation	IS01
974MA-008	3	Cost Reports	IS01
974MA-009	2/3	Export Control Plan and Reports	IS01
974MA-010	3	Contractor Self-Assessment Report	IS01
974MA-011	2	Certification of NISN Systems Readiness	IS01
974MA-012	3	Contractor UNITeS Status Review Report	IS01
974MA-013	3	**Source/Destination Code Handbook**	**IS01**
974MA-014	3	**Mission Network Operations Logs (IPNOC and Conversion Devices)**	**IS01**
974MA-015	3	**Event Analysis and System Problem Resolution Report**	**IS01**
RM – Reliability and Maintainability			
974RM-001	1	Operability/Maintainability Plan	IS01
SA – Safety			
974SA-001	2	On-site Safety and Health Plan	QD50
974SA-002	3	Mishap and Safety Statistics Reports	QD50

Report/Information	PWS paragraph	Frequency	Data Type	Format	Content
Project plans, status and schedule reviews (work accomplished, schedules, resources across functional activities)	2.0.h(1), 2.1.a	Monthly	3	MICS/Online	Show interdependencies between functions and tasks; clearly delineate changes from previous month's schedule
Planned versus actual resource allocation	2.0.h(2)	Maintain current	3	MICS/Online	
Actual resource utilization by UNITeS service and customer	2.0.i(1)	Maintain current	3	COSMIS	
COSMIS rates	2.0i(2)	Annually	3		
Headcount Allocations Report	2.0.i(3)	Maintain current	3	Hardcopy	By full cost accounting pools of MSFC IT Services, Center G&A Services, NISN services, and corporate G&A Services
Weekly Activity Report	2.1.c, 3.9.2.3.b, 5.10.2.3.b	Weekly	3	Online	Significant accomplishments, problems encountered, quality assurance results, and corrective actions.
Tracking of official communication with COTR (e.g., technical direction, information requests, transmittals) and status concerning all such communication	2.1.d	Maintain current	3	Hardcopy	
Cost Accounting System	2.3.a	Maintain current	5	MICS/Online	
Contract administration information system	2.4.b	Maintain current	5	MICS/Online	
Procurement information system	2.5.a, 2.5.b	Maintain current	5	MICS/Online	Status tracking of individual procurements; funding verification; contractor policies/procedures, etc.
Customer Satisfaction Surveys Summary Report	2.11.2.g, 2.11.3	Monthly J-2-25 (Mod. 69)	2	Online database	Summarize customer satisfaction survey data (number of surveys sent, responses received, action taken, and results) within each customer service area.

Report/Information	PWS paragraph	Frequency	Data Type	Format	Content
Consolidated NPPS data	3.1.2.f	Monthly	3	Online	Projections of computer time requirements, product schedules in response to customer inputs
Hostile probe database trending report	3.3.i	Weekly Monthly	3	Online	Information collected on hostile probes throughout Agency
Nature of NASA Network Traffic Report	3.3.1	Monthly	3	Online	NASA network traffic passing between NASA and partners, including Internet
Computer systems planned versus actual utilization by customer	3.4.2.h	Monthly Quarterly	3	Online	
Computer systems performance, throughput and capacity reports	3.4.2.g	Monthly	3	Online	
Network performance and capacity reports	3.4.3.d	Monthly	3	Hardcopy and online	Network performance, throughput, utilization & capacity
Midrange Services utilization reports	3.4.4.f, 5.2.1.f, 5.2.2.f	Monthly	3	Online	
Russian IT Security reports	3.5.3	Monthly	3	Online	Network metrics, web trending reporting, incident response
GSA vendor cost and usage reports	3.6.1	Monthly	3	Online	GSA vendor usage and cost
ViTS Reporting	3.6.3.1.c	Maintain current	3	Electronic	Scheduling
Mission Video Distribution Activities Report	3.6.3.6.e	Weekly	3	Online	Documentation of all operations, engineering, maintenance and repair activities
Mission Video Distribution Activities Daily Log	3.6.3.6.e	Maintain current	3	Online	
VoTS information	3.6.4.1.a, 3.6.4.1.d	Monthly	3	Online	Reservations and scheduling information; monthly usage and cost summaries by NASA Center
Facsimile Broadcast Services performance and utilization metrics	3.6.10.c	Monthly	3	Online	
Network scheduling daily log	3.7.1.e	Maintain current	3	Online	
Network activity and outage reports	3.7.1.g	Archived J-2-26 (Mod. 69)	5	Online	

Report/Information	PWS paragraph	Frequency	Data Type	Format	Content
Network monitoring service performance metrics in support of service level agreements	3.7.2.f	Monthly	3	Hardcopy and online	Network performance, throughput, utilization & capacity
Network expansion plans	3.7.2.1	As required	3	Hardcopy	Expansion plans based on monitoring of system traffic patterns
Network carrier performance reports and recommendations	3.7.2.o, 3.7.2.p	Monthly and Quarterly	3	Hardcopy and online	Performance reports; recommendations for improvement of carrier performance and resolution of recurring problems.
Network problem reporting and resolution	3.7.4.b	As required	3	Online	
Customer trouble call log	3.7.4.d, 3.7.4.g	Update automatically	4	Online	Automatic log of customer trouble calls, including metrics (e.g., caller queue times, abandoned calls, etc)
Installation Daily Log	3.7.4.i	Maintain current	4	Online	Log of installation troubleshooting and restoration activities
Customer Support Center Status System	3.8.1.c, 3.8.1.e, 3.8.1.f, 3.8.2.a, 5.9.1.c, 5.9.1.e, 5.9.2.a, 5.10.1.2.b	Maintain current	4	Online	Information related to service requests, problems and resolutions
Service Request Status Reports	3.8.2.d, 5.9.2.d	Monthly	3	Online	
Maintenance information	3.9.4.b, 5.10.4.b	Monthly	3	Online	Information on operational failures, incidents, discrepancies, and problem disposition and resolution
Maintenance Daily Log	3.9.4.b, 5.10.4.b	Maintain current **J-2-27 (Mod. 69)**	3	Online	Log of all maintenance and repair activities

Report/Information	PWS paragraph	Frequency	Data Type	Format	Content
Monthly Maintenance Reports	3.9.4.c, 5.10.4.c	Monthly	3	Online	Information on outages (e.g., component involved, period of downtime, corrective actions). To assist the Government in assessing credits due to the Government.
IEMP Integration Project Workplan/Schedule	4.2.1.1, 4.2.2.2	Monthly	3	Online	
IEMP Module Project Service Level Agreement (SLA) Metric Report(s)	4.3.5.1	Monthly	3	Online	Monthly reporting of IFMP Competency Center performance against SLA performance requirements
Applications and Web Services Reports	5.1, Attachment J-4-(F)	Quarterly	3	Online	Trouble ticket score with supporting data [ref. Attachment J-4-(F)]
Help Desk Status Reports	5.9.1.f	Monthly	3	Online	
Personnel Activity Report	N/A	Quarterly	3	Online, Hardcopy to CO	Personnel levels, attrition rates, relocation, training expenses, etc
Building Incident/Traffic Citations Report	N/A	Quarterly	3	Online, Hardcopy to CO	Unsecured doors, speeding/parking tickets, etc.
Security Products and Solutions Test and Evaluation Report	3.12	**One time**	3	**Online, Hardcopy to GSFC**	**Network security products and services test and evaluation data**
"As Built" Security Lab Documentation	3.12	**One time**	3	**Online, Hardcopy to GSFC**	**Physical layout and drawings of hardware and infrastructure**
Security Lab Operations Plan	3.12	**One time**	3	**Online, Hardcopy to GSFC**	**Plan for physical and cyber security of facility, equipment, and data**
Vulnerability Scan Findings and Metrics Report	3.12	**Quarterly**	3	**Online, Hardcopy to GSFC**	**Quarterly reporting of scanning findings and metrics performance**
Intrusion Detection Report	3.12	**Monthly**	3	**Online, Hardcopy to GSFC**	**Monthly reporting of all detected network intrusions and corrective actions.**

(Mod. 69)

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 974   **ISSUE:** Basic
2. **DRD NO.:** **974MA-012**
3. **DATA TYPE:** 3
4. **DATE REVISED:**
5. **PAGE:** 1/1

6. **TITLE:** Contractor UNITeS Status Review Report

7. **DESCRIPTION/USE:** To provide the contractor's status of major activities and projects across all UNITeS service areas, including performance against contract standards/metrics and any items or issues that may impact performance evaluation.

8. **OPR:** IS01   9. **DM:** IS01

10. **DISTRIBUTION:** Online with hard copy to CO and COTR

11. **INITIAL SUBMISSION:** Monthly report: submit online prior to initial UNITeS Status Review following the effective date of this modification.

12. **SUBMISSION FREQUENCY:** Monthly report: submit online prior to each monthly UNITeS Status Review.

13. **REMARKS:**
14. **INTERRELATIONSHIP:** PWS paragraph 2.1.a, 5.1.4.1, 5.1.4.2, 5.1.4.3, 5.1.4.4

15. **DATA PREPARATION INFORMATION:**
15.1 **SCOPE:** The report provides the contractor's status of major activities and projects across all UNITeS service areas, including performance against contract standards/metrics and any items or issues that may impact performance evaluation.

15.2 **APPLICABLE DOCUMENTS:** None

15.3 **CONTENTS:** The Contractor UNITeS Status Report shall:
   a. Capture action items, provide status, metrics, critical projects, wrap-up, risks, and issues based on currently utilized format.
   b. Describe the contractor's self-assessment of performance of the PWS tasks.
   c. Describe the contractor's self-assessment of performance against the contract performance standards for both objectively and subjectively measured areas of the PWS.

15.4 **FORMAT:** Contractor format is acceptable.

15.5 **MAINTENANCE:** None required

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 974   **ISSUE:** Basic
2. **DRD NO.: 974MA-013**

3. **DATA TYPE:** 3
4. **DATE REVISED:**
5. **PAGE:** 1/1

6. **TITLE:** Source/Destination Code Handbook

7. **DESCRIPTION/USE:** To document information pertinent to Mission Network data routing.

8. **OPR:** IS01   9. **DM:** IS01

10. **DISTRIBUTION:** Online with hardcopy to GSFC

11. **INITIAL SUBMISSION:** Within 90 days of contract change

12. **SUBMISSION FREQUENCY:** Every 6 months

13. **REMARKS:** None.
14. **INTERRELATIONSHIP:** PWS paragraph 3.10.3

15. **DATA PREPARATION INFORMATION:**
15.1 **SCOPE:** Documentation of routing configuration for Mission Network

15.2 **APPLICABLE DOCUMENTS:**
    None

15.3 **CONTENTS:** Network data routing addresses mapped to source and destination codes and information related to users and purpose of routes.

15.4 **FORMAT:** Contractor format is acceptable.

15.5 **MAINTENANCE:** For every network routing change

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 974   **ISSUE:** Basic   2. **DRD NO.: 974MA-014**
3. **DATA TYPE:** 3   4. **DATE REVISED:**
                                               5. **PAGE:** 1/1

6. **TITLE:** Mission Network Operations Logs (IPNOC and Conversion Devices)

7. **DESCRIPTION/USE:**   To document information pertinent to operations, testing, and restoral activities of the Mission Network.

8. **OPR:** IS01   9. **DM:** IS01

10. **DISTRIBUTION:** Online with hardcopy to GSFC

11. **INITIAL SUBMISSION:** Upon request

12. **SUBMISSION FREQUENCY:** Upon request

13. **REMARKS:** None.
14. **INTERRELATIONSHIP:** PWS paragraphs 3.10.2.1, 3.10.2.2

15. **DATA PREPARATION INFORMATION:**
15.1 **SCOPE:**   Mission Network Operations Logs will include all pertinent information related to operations, testing and restoral activities of the Mission Network.

15.2 **APPLICABLE DOCUMENTS:**
     None

15.3 **CONTENTS:** To include Mission circuit numbers, vendor information, reason for
     outages and resolution information.

15.4 **FORMAT:** Contractor format is acceptable.

15.5 **MAINTENANCE:** Daily

DATA REQUIREMENTS DESCRIPTION (DRD)

1.	**DPD NO.:** 974 **ISSUE:** Basic	2.	**DRD NO.: 974MA-015**
3.	**DATA TYPE:** 3	4.	**DATE REVISED:**
		5.	**PAGE:** 1/1

6. **TITLE:** Event Analysis and System Problem Resolution Report

7. **DESCRIPTION/USE:** To document information pertinent to network and sustaining engineering support of operations, testing, and restoral activities of the Mission Network.

8. **OPR:** IS01   9. **DM:** IS01

10. **DISTRIBUTION:** Online with hardcopy to GSFC

11. **INITIAL SUBMISSION:** Upon request

12. **SUBMISSION FREQUENCY:** Upon request

13. **REMARKS:** None.
14. **INTERRELATIONSHIP:** PWS paragraph 3.10.1

15. **DATA PREPARATION INFORMATION:**
15.1 **SCOPE:** Provide documentation of network and sustaining engineering support to operations, testing and restoral activities of the Mission Network.

15.2 **APPLICABLE DOCUMENTS:**
None

15.3 **CONTENTS:** For Mission Network, provide documentation of Event Report (ER) analysis and resolution, priority System Problem Report (SPR) resolution (if necessary), respond to Daily Summary Reports (DSR), and provide on-call mission availability.

15.4 **FORMAT:** Contractor format is acceptable.

15.5 **MAINTENANCE:** Daily

DATA REQUIREMENTS DESCRIPTION (DRD)

1.	**DPD NO.:** 974	**ISSUE:** Basic	2.	**DRD NO.:** **974RM-001**
3.	**DATA TYPE:** 1		4.	**DATE REVISED:**
			5.	**PAGE:** 1/2

6. **TITLE:** Operability/Maintainability Plan

7. **DESCRIPTION/USE:** To provide the Contractor and the Government a baseline document for Operability/Maintainability.

8. **OPR:** IS01   9. **DM:** IS01

10. **DISTRIBUTION:** Per Contracting Officer's letter.

11. **INITIAL SUBMISSION:** April 13, 2004

12. **SUBMISSION FREQUENCY:** One time and revisions to reflect significant changes.

13. **REMARKS:**
14. **INTERRELATIONSHIP:** PWS paragraphs 3.9.4, 3.9.4.a, 3.9.4.1, 3.9.4.1.a(1), 3.9.4.2.c, 3.9.4.2.d, 5.3.a, 5.3.b, 5.10.4, 5.10.4.a, 5.10.4.1, 5.10.4.1.a(1), 5.10.4.2.c, 5.10.4.2.d; Appendix A

15. **DATA PREPARATION INFORMATION:**
15.1 **SCOPE:** This plan shall define all system operability and maintainability activities appropriate for providing the services and performing the functions set forth in the PWS.

15.2 **APPLICABLE DOCUMENTS:** None

15.3 **CONTENTS:** The plan shall address for each system the applicable availability parameters, methodology for establishment of the parameters, identification and analysis of the risks associated with the parameters, and detailed approaches for performing within the defined parameters. The plan shall include:
a. Availability Parameters:
   1. Overall percentage of system availability.
   2. Preventive Maintenance:
      (a) Schedule for performing.
      (b) Downtime required.
      (c) Meantime between failures.
      (d) Define Principle Periods of Maintenance (PPM) for each system.
   3. Remedial Maintenance:
      (a) Response time.
      (b) Meantime to repair.
      (c) Operational procedures to ensure system continues to operate while any failed component is being replaced.
   4. Methodology used to establish parameters.
b. Identification and Analysis of Risks:
   1. Failure modes and effects.
   2. Impact of nonavailability.
   3. Trade-offs.

DRD Continuation Sheet

15. **DATA PREPARATION INFORMATION (CONTINUED):**

    c. Detailed Performance Approach:

       1. Preventive maintenance.

       2. Remedial maintenance.

       3. System backups.

       4. Warranty identification and enforcement.

    d. Baselined Operation Hours:

       1. Scheduled hours of service.

       2. Total hours in which business is scheduled.

       3. Specified time period, e.g., month or quarter.

    e. Format and Content of Monthly Maintenance Report.

15.4 **FORMAT**: Contractor format is acceptable with MSFC approval.

15.5 **MAINTENANCE**: Changes shall be incorporated by change page or complete reissue.

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 974   **ISSUE:** Basic   2. **DRD NO.: 974SA-001**

3. **DATA TYPE:** 2   4. **DATE REVISED:**

                                               5. **PAGE:** 1/3

6. **TITLE:** On-site Safety and Health Plan

7. **DESCRIPTION/USE:** To provide the contractor and the Government a baseline document for planning, management, control, and implementation of the contractor's industrial/occupational safety, health, and environmental program.

8. **OPR:** QD50   9. **DM:** IS01

10. **DISTRIBUTION:** Per Contracting Officer's letter

11. **INITIAL SUBMISSION:** Preliminary with proposal

12. **SUBMISSION FREQUENCY:** Final ten days after effective date of the contract; update as required

13. **REMARKS:**

14. **INTERRELATIONSHIP:** NFS 1852.223-70, *Safety and Health*; FAR 52.223-3, *Hazardous Material Identification and Material Safety Data*; FAR 52.223-4, *Recovered Material Certification*; FAR 52.223-5, *Pollution Prevention and Right-to-Know Information*; FAR 52.223-7, *Notice of Radioactive Materials*; FAR 52.223-9, *Estimate of Percentage of Recovered Material Content for EPA-Designated Products*; FAR 52.223-10, *Waste Reduction Program*; FAR 52.223-11, *Ozone Depleting Substances*; FAR 52.223-12, *Refrigeration Equipment and Air Conditioners*; FAR 52.223-13, *Certification of Toxic Chemical Release Reporting*; and FAR 52.223-14, *Toxic Chemical Release Reporting*. PWS paragraph 2.8

15. **DATA PREPARATION INFORMATION:**

15.1 **SCOPE:** The On-site Safety and Health Plan describes the contractor's method of implementing occupational safety, health, and environmental standards over the duration of the contract.

15.2 **APPLICABLE DOCUMENTS:** Implementation of the following Occupational Safety and Health Standards and applicable requirements shall be specified in the plan.

29 CFR 1910	*Department of Labor; Occupational Safety and Health Administration Standards for General Industry*
29 CFR 1926	*Department of Labor; Occupational Safety and Health Administration Standards for Construction Industry* (if applicable to scope of this contract)
40 CFR	*Protection of the Environment*

ANSI Standards applicable to the scope of this contract

ASME Boiler and Pressure Vessel Code

MPG 8500.1	*MSFC Environmental Management Program*
MPG 1040.3	*MSFC Emergency Plan*
MPG 1840.3	*MSFC Hazardous Chemicals in Laboratories Protection Program*
MPG 1840.1	*MSFC Confined Space Entries*
MPD 1860.2	*MSFC Radiation Safety Program*
MPG 1810.1	*MSFC Occupational Medicine*
MPD 1840.3	*MSFC Respiratory Protection Program*
MPD 1840.2	*MSFC Hearing Conservation Program*
MPD 1840.1	*MSFC Environmental Health Program*

DRD Continuation Sheet

15.   DATA PREPARATION INFORMATION (CONTINUED):

MPG 1840.2	*MSFC Hazard Communication Program*
MPD 1860.1	*Laser Safety*
MPG 1800.1	*Bloodborne Pathogens*
MWI 3410.1	*Personnel Certification Program*
MPG 8715.1	*Marshall Safety, Health and Environmental (SHE) Program*
MPD 8900.1	*Medical Operations Responsibilities for Human Space Flight Programs* (NOTE: This document only applies to Space Station contracts)
NFPA Standards	*National Fire Codes*
NPG 8715.3	*NASA Safety Manual*
NASA-STD-8719.11	*Safety Standard for Fire Protection*

15.3   **CONTENTS**: The plan shall describe the manner in which the contractor shall implement the intent of the requirements of the applicable documents as they pertain to the specific statement of work tasks to be performed. The plan shall define the safety, health, and environmental program, objectives and goals, management structure, and detailed description of the total safety program including responsibilities, procedures, reporting, training, compliance methodologies, and interface and coordination activities. The On-site Safety and Health Plan shall include:

    a.   Management commitment and employee involvement in the safety and health program:

       1.   Statement of management policy, commitment, and accountability to provide for the safety and health of personnel (i.e., employees, customers, and public) and property and compliance with EPA, OSHA and NASA requirements.

       2.   Provision for top-level management monthly safety and health committee meetings.

       3.   Descriptions of safety and health awareness and motivation programs, including documented safety meeting requirements, and documented safety awareness training for employees. (Safety meeting statistics documented in the Supervisors Safety Web page: http://msfcsma3.msfc.nasa.gov/dbwebs/apps/sswp/SSWP_login.taf)

       4.   Means of program evaluation, identifying duties, methods and frequency for internal evaluation of the safety and health program, and identification of personnel who perform evaluations and to whom evaluations are reported and who approves corrective action.

       5.   Flowdown of safety responsibilities between appropriate tiers (i.e., subcontractors).

       6.   Identification of employees (by type, classification, and qualification) responsible for the implementation of the above elements.

    b.   System and worksite hazard analysis:

       1.   Methods of hazard identification and control, e.g., hazard analysis and risk assessment.

       2.   Descriptions of OSHA programs that require documented plans (e.g., Personnel Protective Equipment (PPE), Confined Space, and Lockout/Tagout, etc. Include the interrelationships with the MSFC plans.) (Note: only programs applicable to the contract need to be addressed.)

       3.   Requirements for formal safety inspections and correction of deficiencies.

       4.   Requirements for documented safety visits (e.g., one per month per supervisor) documented in the Supervisors Safety Web page.

       5.   Schedules of the frequency and documentation requirements for inspections, plan and procedure reviews, and certifications.

    c.   Hazard prevention and control:

       1.   Methods to include clear statements of hazardous situations and necessary cautions in appropriate detail plans, procedures, and other working documents.

       2.   Controls over the procurement, storage, issuance, and use of hazardous substances and procedures for recycling and disposal of hazardous waste.

15.   **DATA PREPARATION INFORMATION (CONTINUED):**

       3.   Method of ensuring a documented emergency management program. Include a list of emergency points of contract. (Note: on-site contractors may use MPG 1040.3.)

       4.   Method of reporting and investigating all mishaps and close calls, including an outline of reporting requirements and a description of how root cause analysis is to be accomplished.

       5.   Provisions for safety, health, and environmental services such as hazardous waste disposal, industrial hygiene monitoring, emergency medical support, hearing conservation program, and hazard communication.

       6.   Provision for suspending work where safety or environmental conditions warrant such action.

    d.   Safety and health training:

       1.   Means for training each employee to recognize hazards and avoid accidents, and assuring each employee has a clear understanding of the disciplinary program.

       2.   Provisions for training and certification of personnel performing potentially hazardous operations. Job categories under the contracted effort that require certification shall be identified. Personnel Certification for the identified job categories shall be tracked in the MSFC Certification Database (CERTRAK) in accordance with MWI 3410.1 "Personnel Certification Program."

    e.   Environmental compliance - Provisions for compliance with environmental laws and regulations by: reporting hazardous and toxic substance use; implementing green procurements; reducing, reusing, and recycling of hazardous and toxic substances prior to disposal; minimizing stormwater pollution; ensuring equipment and processes permitted by applicable laws; and disposing of solid and liquid materials as permitted by applicable laws.

15.4   **FORMAT**: Contractor format is acceptable.

15.5   **MAINTENANCE**: Changes shall be incorporated by change page or complete reissue.

DATA REQUIREMENTS DESCRIPTION (DRD)

1. **DPD NO.:** 974 **ISSUE:** Basic	2. **DRD NO.:** **974SA-002**
3. **DATA TYPE:** 3	4. **DATE REVISED:**
	5. **PAGE:** 1/2

6.   **TITLE:** Mishap and Safety Statistics Reports

7.   **DESCRIPTION/USE:** To provide reporting of mishaps and related information required to produce metrics for MSFC.

8.   **OPR:** QD50   9. **DM:** IS01

10.   **DISTRIBUTION:** Per Contracting Officer's letter

11.   **INITIAL SUBMISSION:**
   a. Mishaps and Close Calls:
      1. <u>Type A or B mishaps only</u>: Immediate telephone notification (256-544-0046)
      2. <u>Type A, B and C mishaps</u> (**applicable to onsite contractors only**): Flash Report within 4 hours of knowledge on MSFC Form 4370, submitted either electronically (at https://msfcsma3.msfc.nasa.gov/s&ma_01/mishap/index.htm)or by telephone [Call 256-544-4357 (4-HELP); ask operator to fill out MSFC Form 4370 or Flash Report].
      3. <u>All Mishaps (Type A, B, C, Incidents and Close Calls)</u>: Mishap Report NASA Form 1627 within 6 calendar days of Mishap
      4. <u>All Mishaps</u>: Monthly Follow-up Corrective Action Plan/Status as required until closed.
      5. <u>Type A, B, and Close Calls with high Type A or B potential</u>: Mishap Board Report after completion of investigation.
   b. Safety Statistics (e.g., contract number, subcontractors, SIC/NAIC codes, number of employees, number of supervisors, etc.): submitted on MSFC Form 4371 by the 10th of each month following effective date of the contract.

12.   **SUBMISSION FREQUENCY:**
   a. MSFC Form 4370 - Each occurrence of a mishap except as identified in section 11.a.2.
   b. NASA Form 1627 - Each occurrence of a mishap. Corrective action status reports are due every 30 days until the final report is submitted.
   c. MSFC Form 4371 - By the 10th of each month.
   d. Mishap Board Report – Each occurrence of a Type A or B mishap, or as directed by Center management.

13.   **REMARKS:**
14.   **INTERRELATIONSHIP:** PWS paragraph 2.8

15.   **DATA PREPARATION INFORMATION:**
15.1   <u>SCOPE</u>: The Mishap and Safety Statistics Reports document all mishaps and close calls as required in NPG 8621.1.

15.2   **APPLICABLE DOCUMENTS**
   NPG 8621.1   *NASA Procedures and Guidelines for Mishap Reporting, Investigating, and Recordkeeping*
   MWI 8621.1   *Close Call and Mishap Reporting and Investigation Program*

DRD Continuation Sheet

15.   **DATA PREPARATION INFORMATION (CONTINUED):**

15.3   <u>CONTENTS</u>: The reports shall contain the information required by NPG 8621.1. The contractor shall use the forms listed in 15.4 to report mishaps and related information required to produce the safety metrics.

15.4   <u>FORMAT</u>: The following formats shall be submitted:
a. MSFC Form 4370, "MSFC Flash Mishap Report."
b. NASA Form 1627, "NASA Mishap Report."
c. MSFC Form 4371, "MSFC Contractor Safety Statistics."
d. Mishap Board Report using the format provided in NPG 8621.1.

15.5   <u>MAINTENANCE</u>: Changes shall be incorporated by change page or complete reissue.